C O R I A N®

Fabrication Manual

DUPONT®

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373-222 FM Preface-Safety Rulesv4.qxd 8/16/2007 11:15 AM Page A

PREFACE

This manual is designed to provide simple and authoritative instructions for the techniques required for the successful fabrication and installation of DuPont™ Corian® Surfaces Products.

It is important to note that the techniques listed have been designed to optimize the performance of DuPont™ Corian® in line with its chemical formulation and exclusive performance properties.

It is impossible to cover all fabrication techniques in this manual. However, we have taken most of the basic elements of fabrication that comply with our DuPont warranty program.

These techniques are intended for use on DuPont™ Corian® only. DuPont does not recommend these techniques for any other products. DuPont shall not be responsible for the use or application of these thecniques on any other surface and or product.

HOW TO USE THIS MANUAL

The manual is organized into tabbed chapters, each chapter covering a major element of fabricating DuPont™ Corian®.

The tabbed chapters are structured in operational order where possible—i.e., start to finish—and should be read in such a way.

Within each chapter are clearly defined sections that include all major components in each major chapter.

For easy reference, a comprehensive index is included at the front.

Rev 8/07

373-222 FM Preface-Safety Rulesv4.qxd 8/16/2007 11:15 AM Page 1

SAFETY RULES

INTRODUCTION

DuPont tries to be at the forefront of creating a safe work environment.

The safety culture within DuPont goes back to the earliest days of the company (1802) when DuPont manufactured gunpowder.

Safety has remained a part of the DuPont culture.

We in the Corian® business follow the same level of safety awareness. Many different tools are used to manufacture, fabricate and install Corian®.

We recommend that you, as a Corian® fabricator/installer, would apply the following safety rules as well.

Following these simple safety rules as well as appropriate OSHA and CCOHS regulations, will help to prevent an accident. “Safety is a key part of our business success.”

373-222 FM Preface-Safety Rulesv4.qxd 8/16/2007 11:15 AM Page 2

SAFETY RULES

1. **For your own safety, read the instruction manual for each tool before operating tools.** Learn the tool's application and limitations as well as the specific hazards particular to it.
2. **Keep guards in place and in working order.**
3. **Ground all tools.** If a tool is equipped with three-prong plug, it should be plugged into a three-hole electrical socket. If an adapter is used to accommodate a two-prong socket, the adapter lug must be attached to a known ground. Never remove the third prong.
4. **Remove adjusting keys and wrenches.** Form habit of checking to see that keys and adjusting wrenches are removed from the tool before turning to "on".
5. **Keep work area clean.** Cluttered areas and benches invite accidents.
6. **Don't use in dangerous environment.** Don't use electric power tools in damp or wet locations or expose them to rain. Keep area clean, dry, well ventilated and well lit.
7. **Keep children and visitors away.** All children and visitors should be kept at a safe distance from the work area.
8. **Make workshop childproof** with padlocks, master switches or by removing starter keys.
9. **Don't force tools.** A tool will do the job better and be safer at the rate for which it was designed.
10. **Use the right tools.** Don't force a tool or attachment to do a job for which it was not designed.
11. **Wear proper apparel.** No loose clothing, gloves, neckties, ring bracelets or other jewelry to get caught in moving parts. Wear protective hair covering to contain long hair, wear ear/noise protectors, wear safety shoes.
12. **Always use safety glasses or approved eye protection.** Also use face or dust mask if cutting operations are dusty. Prescription eyeglasses only have impact-resistant lenses; they are not safety glasses.
13. **Secure work.** Use clamps or a vice to hold work when practical. It is safer than using your hand and frees both hands to operate the tool.
14. **Don't overreach.** Keep proper footing and balance at all times.

373-222 FM Preface-Safety Rulesv4.qxd 8/16/2007 11:15 AM Page 3

SAFETY RULES

15 **Maintain tools in top condition.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.

16 **Disconnect tools** before servicing and when changing accessories such as blades, bits, cutters, etc.

17 **Use recommended accessories.** Consult the owner's manual for recommended accessories. The use of improper accessories may cause hazards.

18 **Avoid accidental starting.** Make sure the switch is in "off" position before plugging in power cord.

19 **Never stand on tool.** Serious injury could occur if the tool is tipped or if the cutting tool is accidentally touched.

20 **Check damaged parts.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to ensure that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.

21 **Direction of feed.** Only feed work into a blade or cutter against the direction of rotation of the blade or cutter.

22 **Never leave tool running unattended.** Turn power off. Don't leave tool until it comes to a complete stop.

23 **Drugs, alcohol, medication.** Do not operate a tool while under influence of drugs, alcohol or any medication.

24 **Make sure the tool is disconnected from power supply** while motor is being mounted, connected or reconnected.

AND ESPECIALLY WHEN HANDLING CORIAN® AND ITS ACCESSORIES:

25 **When carrying Corian® sheets,** use two people, don't flex sheets, wear heavy-duty gloves and, if appropriate, use lifting devices.

26 **Don't stack boxed products** too high or in an unsafe manner.

27 **Keep denatured alcohol, adhesives and any other toxic or flammable materials in a safe, ventilated place.**

TABLE OF CONTENTS

TECHNICAL BULLETIN

CTDC-117

SAFETY RULES

PAGE 1 INTRODUCTION

PAGE 2 RULES

CHAPTER 1 TOOLS AND ACCESSORIES

SECTION 1.1 ROUTERS

1.2 ROUTER BITS

1.3 SAWS AND BLADES

1.4 SANDING AND FINISHING

1.5 TEMPLATES

1.6 STRAIGHTEDGES

1.7 CLAMPING SYSTEMS

1.8 DUST EXTRACTION

CHAPTER 2 SAFE HANDLING AND STORAGE

SECTION 2.1 HANDLING SHEET

2.2 HANDLING SHAPE

2.3 HANDLING ACCESSORIES

2.4 STORING SHEET

2.5 STORING SHAPE

2.6 STORING ACCESSORIES

CHAPTER 3 PRODUCT QUALITY—INSPECTION

SECTION 3.0 PRODUCT QUALITY - INSPECTION

3.1 SHEET INSPECTION

3.2 SHAPE INSPECTION

3.3 ACCESSORIES INSPECTION

3.4 READY-TO-INSTALL LINE INSPECTION

HAPTER 4 SITE PREPARATION AND TEMPLATING

SECTION 4.1 SITE INSPECTION

4.2 TEMPLATES

4.3 E-TEMPLATES

CHAPTER 5 POSITIONING OF SEAMS

SECTION 5.1 EXAMINATION OF PLANS

5.2 SELECTION OF SEAM POSITIONS

5.3 TYPES OF SEAMS

CHAPTER 6 CUTTING CORIAN®

SECTION 6.1 CUTTING LIST

CHAPTER 7 CUTOUTS IN CORIAN®

SECTION 7.1 CUTOUT TEMPLATES

7.2 MAKING CUTOUT TEMPLATES

7.3 MAKING CUTOUTS

7.4 HIGH-STRENGTH CUTOUTS

CHAPTER 8 CORIAN® ADHESIVE SYSTEMS

SECTION 8.1 CORIAN® JOINT ADHESIVE SYSTEM

8.2 BULK JOINT ADHESIVE SYSTEM

8.3 50 ML CARTRIDGE

8.4 ADHESIVE STORAGE

CHAPTER 8 CORIAN® ADHESIVE SYSTEMS (CON'T)

SECTION 8.5 ADHESIVE DISPOSAL
8.6 SILICONE

CHAPTER 9 COUNTERTOP SUPPORT

SECTION 9.1 TYPES OF SUPPORT
9.2 CONSTRUCTING A FRAME
9.3 FABRICATING AND INSTALLING OVERHANG COUNTERTOPS
9.4 COVERING LAMINATE WITH CORIAN®
9.5 SUPPORTING INSIDE CORNERS OVER CAROUSEL CABINETS
9.6 SPAN DESIGN
9.7 SEAT DESIGN

CHAPTER 10 SEAMING CORIAN®

SECTION 10.1 EDGE PREPARATION
10.2 DECK SEAMS
10.3 REINFORCED SEAMS
10.4 WAVY SEAMS
10.6 TONGUE-AND-GROOVE SEAMS
10.7 V-GROOVE SEAMS
10.8 ADHESIVES FOR USE WITH CORIAN®
10.9 MITER SEAMS
10.10 SEAMING FROM A PANEL SAW

CHAPTER 11 INLAYS

SECTION 11.1 INLAY MATERIALS
11.2 INLAYS OF CORIAN®
11.3 LIQUID INLAYS
11.4 SOLID INLAYS
11.5 ZODIAQ®

CHAPTER 12 EDGE DETAILS AND BUILDUPS

SECTION 12.1 PREVENTING CRACK STARTERS
12.2 RABBETING THE UNDERSIDE OF THE DECK
12.3 CONSTRUCTING THE DROP EDGE BUILDUP
12.4 INSIDE CORNER CONSTRUCTION METHODS
12.5 OUTSIDE CORNER CONSTRUCTION METHODS
12.6 USING THE LAMINATED METHOD FOR INSIDE CORNERS
12.7 USING THE THERMOFORMED METHOD FOR INSIDE CORNERS
12.8 USING THE CORNER INSERT METHOD (LAMINATED) FOR INSIDE CORNERS
12.9 USING THE CORNER INSERT METHOD (THERMOFORMED) FOR INSIDE CORNERS
12.10 USING THE LAMINATED METHOD FOR OUTSIDE CORNERS
12.11 USING THE THERMOFORMED METHOD FOR OUTSIDE CORNERS
12.12 LAMINATED METHOD ALTERNATIVES
12.13 STACK EDGE
12.14 EDGE TREATMENTS
12.15 V - GROOVE
12.16 APRON SUPPORT

TABLE OF CONTENTS

CHAPTER 13 BACKSPLASHES

SECTION 13.1 STANDARD HEIGHT BACKSPLASH
13.2 COVED BACKSPLASH METHODS
13.3 USING THE COVING ROUTER METHOD

CHAPTER 14 FASTENING OTHER PRODUCTS TO CORIAN®

SECTION 14.1 CORIAN® TO WOOD/PLYWOOD
14.2 CORIAN® TO METAL
14.3 CORIAN® TO GLASS
14.4 CORIAN® TO ACRYLIC

CHAPTER 15 CORIAN® SHAPE

SECTION 15.1 TOOLS REQUIRED
15.2 TRADITIONAL UNDERMOUNT
15.3 "S" METHOD (UNDERMOUNT)
15.4 READY-TO-INSTALL VANITY TOPS & BOWLS

CHAPTER 16 THERMOFORMING CORIAN®

SECTION 16.1 TOOLS REQUIRED (OVEN DETAILS)
16.2 MATERIAL PREPARATION
16.3 OVEN PREPARATION
16.4 MOLD PREPARATION
16.5 THERMOFORMING WITH STANDARD OVEN AND CLAMPING SYSTEM
16.6 THERMOFORMING WITH HEATED PLATEN AND VACUUM MEMBRANE PRESS

CHAPTER 17 VERTICAL APPLICATIONS

SECTION 17.1 WALL PREPARATION
17.2 SCRIBING
17.3 SEAMING
17.4 ADHERING CORIAN® TO SURFACES
17.5 BASEBOARDS
17.6 CORIAN® TUB & SHOWER SURROUND KITS

CHAPTER 18 FINISHING AND POLISHING

SECTION 18.1 TOOLS REQUIRED
18.2 MATTE FINISH
18.3 SEMIGLOSS FINISH
18.4 GLOSS FINISH
18.5 TRIZACT™
18.6 DIFFICULT FINISHES

CHAPTER 19 TRANSPORTATION AND INSTALLATION

SECTION 19.1 PACKING FOR TRANSPORT
19.2 RACKING FOR TRANSPORT
19.3 INSTALLATION

CHAPTER 20 FOOD SERVICE COUNTERTOPS

SECTION 20.1 CUTOUTS
20.2 INSUL

TABLE OF CONTENTS

CHAPTER 20 FOOD SERVICE COUNTERTOPS (con't)

20.3 SUPPORT
20.4 SEAMS
20.5 EXPANSION JOINTS
20.6 HEAT LAMPS
20.7 HOT PADS
20.8 TRAY SLIDES
20.9 SNEEZE GUARDS
20.10 UNUSUAL DESIGNS
20.11 CHECKLIST

CHAPTER 21 READY-TO-INSTALL PRODUCTS

SECTION 21.1 RESIDENTIAL APPLICATIONS
21.2 COMMERCIAL APPLICATIONS
21.3 EASY ELEGANCE

CHAPTER 22 OTHER APPLICATIONS

SECTION 22.1 FIREPLACE APPLICATIONS
22.2 WINDOWSILLS
22.3 SHELVES
22.4 INTERIOR STAIRS
22.5 USING TILE WITH CORIAN®
22.6 OUTDOOR FURNITURE
22.7 STAINLESS STEEL TRIVET RODS

CHAPTER 23 REPAIRING CORIAN®

SECTION 23.1 MINOR REPAIRS
23.2 PLUG REPAIRS
23.3 PIE-CUT REPAIRS
23.4 SECTION REPLACEMENT
23.5 REPAIR CRACKED SEAMS WITH INSERTS
23.6 REPAIR LARGE AREAS WITH CORIAN® INLAYS
23.7 BOWL REPLACEMENT
23.8 INSTALLING STAINLESS STEEL COOKTOP RING
23.9 REPAIRS TO VEINED CORIAN® INSTALLATIONS

CHAPTER 24 SHAPE PERIMETER DRAWINGS

SECTION 24.1 SHAPE PERIMETER DRAWINGS FOR CNC PROGRAMMING

CHAPTER 25 MATERIAL SAFETY DATA SHEETS

SECTION 25.1 MSDS: CORIAN® PRODUCTS

CHAPTER 26 PROPERTIES AND TEST REPORTS

SECTION 26.1 PHYSICAL PROPERTIES
26.2 CHEMICAL RESISTANCE
26.3 FLAMMABILITY RATINGS
26.4 CORIAN® AND THE ENVIRONMENT
26.5 CORIAN® SAFETY INFORMATION FOR DUST AND FUMES

TABLE OF CONTENTS

CHAPTER 27 CORIAN® HANDS-ON TRAINING

SECTION 27.1 DUPONT FABRICATION TRAINING

27.2 CERTIFIED INSTRUCTORS

27.3 REPAIR TRAINING

CHAPTER 28 PARTIAL TOOL AND ACCESSORY LIST

SECTION 28.1 PARTIAL SUPPLIER LIST

This bulletin summarizes the quality standards that must be met when fabricating and installing DuPont Corian® to ensure that "installed warranty" coverage is considered.

CTDC-117 Rev. March, 2006 (effective 5/01/06)

Technical Bulletin

DuPont™ Corian®
Wilmington, DE

Required Fabrication and Installation Procedures for Corian® Products

DuPont offers a 10 year limited residential warranty to consumers for Corian® products. Unlike other solid surface manufacturers, DuPont offers this warranty to consumers not only for the product but also the installation of its products so long as the installation is done properly and by a Certified Fabricator/Installer. Should a consumer wwarranty claim arise, and DuPont determines the fabrication and/or installation was not done properly; DuPont will seek reimbursement from the Fabricator/Installer responsible for the installation.Please see the Warranty for more details. The list below highlights mandatory procedures. Items added since the April 2003 issue of CTDC-117 are shown ***bold italicized.*** For complete details of these procedures, refer to the "Corian® Fabrication Manual" (C956-H71343),

1. Seams

- Reinforce all shop and field seams. This Corian® reinforcement also serves as the seam support.
- Use only approved adhesives.
- Do not rigidly adhere Corian® to other solid surface products. ***Use only silicone to adhere Corian® to any material other than Corian® or Zodiaq®.***

2. Cutouts

- Use only routers. Use 3/8" (9.5 mm) or larger diameter bits. Round over top and bottom edges of the cutout to a 1/16" (1.5 mm) minimum radius.
- Remove all nicks, tool marks, etc. Use 150-grit or finer sandpaper.
- Sand back edge of countertop behind cooktop smooth and round over top and bottom edges to 1/16" radius.
- Support within 3" (76 mm), but no closer than 1" (25 mm), from the edge of the cutout.
- Leave at least 1/8" (3 mm) clearance space on all sides to allow cooktop/sink expansion.
- High-strength cutouts are required on all cutouts made for heat-generating appliances**.**

3. Installation

- The tops of the cabinets must be flat and true to within 1/8" over a 10' run**.**
- Provide only perimeter support (top edges of cabinets with or without buildup strips). Use only dabs of flexible adhesive no less than 12" (305 mm) apart to fasten tops of Corian® to the perimeter support.
- Allow 1/16" (1.5 mm) minimum clearance between Corian® and walls.
- Support overhangs exceeding: 6" (152 mm) for 1/2" (13 mm) Corian®; 12" (305 mm) for 3/4" (19 mm) Corian®.
- Never install mechanical fasteners (screws, nails, etc.) into Corian®. Brass inserts are the only approved fastener.

CORIAN®
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- In wet wall installations, leave a 1/2" (13 mm) air gap at the bottom of the substrate wall to prevent water leaks from wicking up between the Corian® and the substrate.
- Leave a min. 12" x 12" piece of color match material from each counter on the job for future repairs screwed to the inside of the sink base cabinet.
- Apply 3M brand aluminum tape (3M stock number 4253UAL35175) around cooktop cutouts. The tape must cover all Corian® surfaces under the entire flange, including the vertical edges of the cutout.
- Radius all inside corners of L, U, etc., shaped tops to reduce corner stresses to minimum 1/2" (13 mm) radius.

•Offset seams in Corian® edge buildup strips minimum 1" past end of the inside corner radius.

- Do not install Corian® over underlayment or over old countertops. Integral "dust covers" may be left in place if removal is unacceptable to the customer.

For additional requirements with hot and cold food service and buffet counters, follow all procedures described in CTDC-125 or Fabrication Manual—Section 20 (C956-H71343).

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CORIAN®

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1.1 ROUTERS

There is no absolute recommendation as to which brand of router you should use to work with Corian®.

However, in day-to-day fabrication, you would be well-equipped to have the following power hand tools:

- 1 1/2-hp router
- 2-hp router
- 3-hp router
- 3-hp plunge base router

Some companies seeking higher productivity have made further investments:

- C.N.C. router
- shaper
- panel saw
- V-groover
- water-cooled diamond-tipped saw

Refer to Table 1.1.A below for a guideline of approximate router power recommendations for common tasks:

Table 1.1.A

TASK	MINIMUM POWER
General-Purpose Work: e.g., edge and seam trimming, cutouts	2+ hp
Heavy-Duty Work: e.g., bulk cutouts, banjo cuts, coving	3+ hp
Detail Work: e.g., edge treatment	1 1/2 hp

Note:
Router power output will vary depending on the brand of machinery.

Helpful Hints:

The key element in choosing which router is most suitable for varying tasks is the quality of cut and the overall wear and tear on valuable machinery.

Corian® is made of natural minerals and acrylic resin and is, therefore, very tough on blades and motors. The listed recommendations above are based on maximizing maintenance on routers in day-to-day operations.

1.2 ROUTER BITS

Router bits should, at a minumum, be tipped with tungsten carbide. Polycrystalline diamond bits may be suitable in certain applications utilizing CNC machinery.

For day-to-day fabrication, you should have the following:

- 3/8" (10 mm) carbide-tipped single flute with 1/2" (13 mm) shank
- 3/8"–1/2" (10–13 mm) carbide-tipped double flute with 1/2" (13 mm) shank
- carbide-tipped decorative bits
- 1/2" (13 mm) shank with roller bearing (profile bit)

Table 1.2.A

TASK:	TOOL/BIT
General-Purpose Work e.g., edge and seam trimming, cutouts	3/8" (10 mm) carbide-tipped single flute with 1/2" (13 mm) shank 1/2" (13 mm) carbide-tipped double flute, etc.
Heavy-Duty Work e.g., bulk cutouts, banjo cuts	1/2" (13 mm) carbide-tipped single flute with 1/2" (13 mm) shank polycrystalline diamond bit
Detail Work e.g., coving, edge treatment	carbide-tipped decorative bit with 1/2" (13 mm) shank

Helpful Hints:

Only use quality tungsten carbide-tipped bits. Make sure they are kept sharp, clean and stored in a way that protects them from damage. Regularly check bit bearings for any slackness or play. Lubricate bearings regularly.

1.3 SAWS AND BLADES

Any type of circular saw may be used for ripping and sizing Corian®. Most acceptable common varieties include:

- stationary saw bed with sliding tray
- vertical panel saw
- drop-cut saw with 45-degree angle option
- heavy-duty portable circular saw
- radial arm saw
- beam saw

Regardless of the type of circular saw, all saws must:

1. be heavy-duty.

2. have triple-chip blades of tungsten carbide which should be used only for cutting Corian®.

3. have blades with hook angle of –5 degrees to +10 degrees and be described as "for cutting hard plastics."

4. have a quiet blade; small gullets, brass plugs and heavier blade stock.

5. also, all safety guides must comply with the local safety standards.

Blades should be sharpened regularly with a 400- to 600-grit grinding wheel.

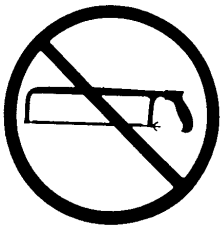
Blades should have 6 teeth per 1" (25 mm) diameter. Refer to Table 1.3.A for the most successful dry blades for cutting Corian®.

Table 1.3.A

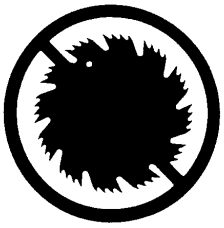
BLADE SIZE inches (mm)	NUMBER OF TEETH
7 1/2" (190 mm)	40
10" (254 mm)	60
12" (300 mm)	72
16" (406 mm)	100

The following tools must not be used, in any circumstances to cut Corian®:

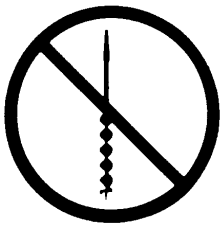
Saber Saws



Hacksaws



Ripping or Combination Blades



Auger Bits

Helpful Hints:

For large-volume work, a water-cooled diamond saw is recommended as the most economical saw.

Heavy-duty, handheld circular saws may be used to "bring the tool to the material." Use tungsten carbide blade with correct blade configuration, referring to Table 1.3.A.

The correct tools are essential for cutting Corian® to ensure that no chipping occurs and that all cuts are neat and clean.

Any small cuts or fractures in a Corian® cut may lead to cracking when the sheet is subject to stresses. **As with glass, any nicks or fractures create potential weaknesses in the sheet.**

The best way to eliminate stress from saw cuts is to trim all sawn edges with a shaper or router with a sharp straight cutting tool.

1.4 SANDING AND FINISHING

In day-to-day fabrication, you need to be well equipped and have the following:

- orbital sander
- palm sander
- random orbital sander or varying sizes
- stationary belt sander
- portable belt sander

Microfinishing film abrasives are used for day to day finishing.

Open-coat silicone carbide sandpaper is recommended for quick sizing.

Other abrasive systems are available that will work well on Corian® surfaces.

Using sanding systems with vacuum dust extraction will speed up work, lessen clean up and save wear and tear on the sander.

Helpful Hints:

Many high volumn shops use air sanders as they provide greater tool longevity.

Use machines for which spare parts and service are readily available, as sanders are subject to extreme wear and tear while working Corian®. Also "blow out" tools on a regular basis to clean out the fine dust.

1.5 TEMPLATES

Templates are made from:

1. Compressed materials.
2. Corian®. (To avoid the Corian® Joint Adhesive sticking to the Corian® template, apply several coats of furniture polish to the template. The fine wax buildup will help to eliminate sticking from Joint Adhesive.)

Store all templates in a way that keeps them in good condition and the leading edge true (such as in a vertical rack).

Templates are essential in ensuring that cutouts are clean and smooth, which means perfect seams for shape installation.

1.6 STRAIGHTEDGES

Straightedges are critical for truing edges prior to finishing and for preparing edges to be seamed. There are a number of commercially available straightedges, or you can make them yourself.

1.7 CLAMPING SYSTEMS

Several types of clamps are suitable for use with Corian®. Among these are:

- spring clamps
- C-clamps
- small bar clamps
- vacuum-clamping systems
- PVC ring clamps
- wood bar clamps

Table 1.7.A shows which clamping systems are recommended for different applications.

Table 1.7.A

TASK:	TYPE OF CLAMP
Attach buildup strips	PVC ring clamps, spring clamps, C-clamps, small bar clamps or wood bar clamps
Hold templates or straightedges in place	C-clamps or bar clamps, vacuum clamping systems
Hold bowls during seaming	Bowl clampoing jigs, vacuum systems, locking pliers with long jaws

Helpful Hints:

Keep clamps clean and in a readily accessible position in the work area.

1.8 DUST EXTRACTION

Although Corian® dust is nontoxic, all dust should be removed at the point of generation wherever possible.

Ducted extraction should be provided over all cutting and sanding areas of the workshop.

Hand sanders should be fitted with portable dust extractors and, if possible, to vacuum extractors.

Helpful Hints:

Keep filters regularly maintained to ensure effective operation. Several tool manufacturers make sanding systems with vacuum dust extractors which switch on when the sander is activated.

2.1 HANDLING CORIAN® SHEET

Corian® sheet is best unloaded from the delivery vehicle on the pallet with a forklift or lifting device capable of handling at least 1,100 lbs. (499 kg) safely. Corian® pallets of 1/2"x 30" x 144" (13 mm x 762 mm x 3,656 mm) can weigh upto 1,900 lbs (863 kg).

If no forklift is available, the pallet should be opened on the vehicle bed, and sheet manually handled on edge, one sheet at a time. Always wear heavy-duty protective gloves.

Because of the weight (each sheet is approx. 130 lbs. [59 kg]) and sharpness of Corian® edge in sheet form, proper safety shoes and gloves should be worn.

All individual sheets must be handled by two people and carried on edge with one hand under to support, and one hand over to control the sheet.

Special carrying devices are also a good alternative when carrying large Corian® sheets.

There are many manufacturers of vacuum lifts and heavy duty carts which can be used to handle heavy sheets and tops.

Helpful Hints:

Do not attempt to unload or carry Corian® sheets unaided.

Do not carry sheets horizontally or unsupported, and do not handle sheets with bare hands when unloading.

The product is fragile, heavy and must be handled with care to ensure that first-grade material ends up on the workbench. This is especially true when temperatures fall below 40°F (3°C) as lower temperatures may cause Corian® to become more brittle.

2.2 HANDLING SHAPE

Shape product should be carried using the spaces and as per the carrying instructions on the carton (i.e., "Fragile," "This Side Up").

Although the cartons are produced to afford the maximum transport protection, it is very important that the Corian® sheets are treated as fragile at all times.

Helpful Hints:

Do not drop, drag or risk impact to shape cartons. Do not place heavy loads on top of shape.

2.3 HANDLING ACCESSORIES

General accessories require no specific handling instructions; however, Corian® Joint Adhesive requires care in use, specifically:

Avoid contact with eyes. If this occurs, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention.

For contact with skin, wash with sopa and water

If Corian® Joint Adhesive fumes are inhaled, remove to fresh air.

If Corian® Joint Adhesive is swallowed, Do Not induce vomiting. Give 2 glasses of water and call a physician immediately.

Helpful Hints:

Don't leave accessories such as Corian® Joint Adhesive exposed to extremes of temperature for long periods of time.

Protect eyes and skin from both components of Corian® Joint Adhesive.

2.4 STORING SHEET

Sheet must be stored so that the product is kept in a perfectly level condition (i.e., no warping).

There are two ways to achieve this:

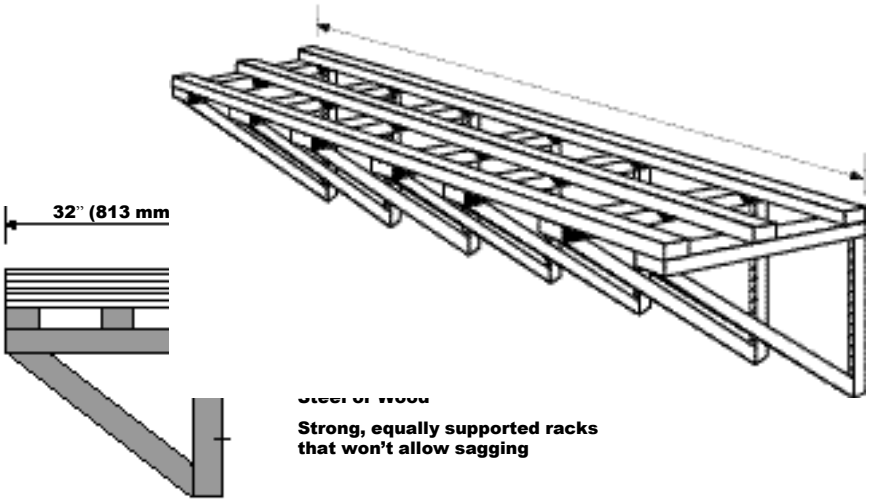
1. Corian® can be stored horizontally

2. On its long edge.

1. Corian® can be stored horizontally

Support must be such that the sheet is kept in a perfectly level condition (i.e., no sagging or warping). This requires either full underlay support or rack support every 24" (610 mm) as illustrated in Figure 2.4.A.

Figure 2.4.A



The pallets on which Corian® is shipped will be sufficient if they are in good condition and are not missing any blocks.

2. Store the sheets on the long edge.

The base of the sheet should be fully supported by the floor or similar stable platform.

Sheets should lean on supports affixed to a wall or strong vertical support. These supports must be capable of supporting a maximum of twelve $^{1}/_{2}$" (13 mm) sheets per rack.

Corian® sheets are most effectively stored between **60°–75°F** and must be kept in a dry and well-ventilated area.

Care must be taken to store Corian® sheets in a manner that allows for easy identification of batch number and color.

Helpful Hints:

The key element in storage of Corian® sheets is to ensure that sheets are kept in a manner that prevents any warping.

Corian® should not be allowed to get wet in storage.

Access to sheets for easy handling is essential, as is a storage system which allows for easy sheet batch identification.

2.5 STORING SHAPE

Shape should be stored to allow easy access and identification of the contents of the carton.

Do not store heavy products on top of shape cartons. For safety, shapes should not be stacked more than six cartons high.

Under no condition should Corian® cartons be stored outdoors.

Helpful Hints:

Do not allow cartons to get hot or be exposed to damp or wet conditions.

Shape product should be stored off of the floor and in an area away from high traffic or regions of heavy activity where interference and potential breakage could occur.

While Corian® shape product is well packaged, it is still the most fragile form of Corian® material. Diligent care should be taken in its handling and storage.

2.6 STORING ACCESSORIES

No specific care and attention is required for Corian® accessories, with the exception of Corian® Joint Adhesive and other DuPont adhesives.

Corian® Joint Adhesive must be stored in the dark and below **80°F**. It is not necessary to refrigerate Joint Adhesive. Storing it in an air-conditioned room is sufficient or in containers that provide insulation, such as a styrene foam container, greatly enhances the shelf life of the product.

All Corian® adhesives generally have a shelf life of two years.

Store all adhesives and silicone in a cool, dry place.

Refer to the following guide for shelf life of all adhesives:

1. Corian® Joint Adhesive

Refer to lot # or expiration date printed in code on the tube as illustrated below:

0120091	
Color	(Noted on tube)
01—January	(first two digits indicate the month of expiration 01–12)
2009	(next four digits indicate the year of expiration)
1—Batch #	(last digit is irrelevant in terms of use-by date)

Note:
The use-by date for all adhesives is listed on the outside of the shipping carton.

3. DuPont Corian® Silicone

DuPont Corian® Silicone has a guaranteed shelf life of **two years** when stored properly as noted.

Refer to the expiration date printed on the label of all cartridges as illustrated below:

JAN 09	
Jan	Month of expiry
09	Year of expiry

Helpful Hints:

When considering the variation in temperatures in a standard workshop (32°–100°F), the Joint Adhesive can easily be affected. Take proper precautions such as suggested in this section to avoid this.

Store adhesives in a manner that allows easy identification of shelf life to enable "first in, first out" merchandising. Corian® Joint Adhesive and other DuPont adhesives are corrosive and highly flammable. Extreme care should be taken at all times!

Do not expose Corian® adhesives to any extremes in temperature.

While variations in temperature do not immediately render Joint Adhesive unusable, varying temperatures in storage can reduce its shelf life.

This should be minimized wherever possible.

Visual inspection for defects or color match is essential when working with Corian® and is standard good trade practice.

The following simplified product specifications are given to you as a reference tool.

The continuous improvement programs of our manufacturing processes and controls will result in upgrades in our product specifications and narrowing of our tolerances.

Helpful Hints:

Do not work with product that will greatly increase the amount of fabrication required due to defective material.

Call your Authorized Distributor of Corian® for assistance whenever you are unsure of raw material quality. Be prepared to give the manufacture code and at least one sequence number from the suspect sheet.

Note:
DuPont will replace any Corian® material not conforming to product specifications when delivered. However, DuPont *will not* pay for labor costs for any fabrication done on defective material.

3.1 SHEET INSPECTION

Table 3.1.A lists the different items you should look for when you make a visual inspection of the Corian® sheets.

Table 3.1.A

SHEET INSPECTION—ITEMS TO LOOK FOR	SPECIFICATION
broken	
cracks	
sheet/sheet color match	3.1.1
color inconsistency within sheet	3.1.2
particles pattern irregularity	3.1.3
length/width/square	3.1.4
thickness	3.1.5
tapered edge	3.1.6
length warp	3.1.7
warp: smiles/frowns	3.1.8
black spots	3.1.9
white spots	3.1.9
face-side pinholes/voids/ripples	3.1.10
underside pinholes/voids/ripples	3.1.11
edge cracks/chips	3.1.12

3.1.1 COLOR MATCH

An essential element to sheet inspection is checking for color match.

The composition of Corian® produces slight color variations between production cycles due to the innate and complex blending of natural minerals and man-made acrylics. This characteristic is inherent in the product, hence the strict guidelines set forth below:

DuPont does not guarantee color match. It is up to the fabricator to insure acceptable color match between sheets.

Color match can be checked in three ways:

1. By conducting a trial color match.

2. By using sheets from the same pallet.

3.By checking that the code printed on the underside of all sheets is within a specified range.

STEPS TO COMPLETION OF A COLOR MATCH:

A. **Trial Color Match**

1. Cut a representative strip from the intended sheets to be seamed.
2. Seam these pieces together. Use cyanoacrylate glue for fast and simple adhesion.
3. Polish to intended finish.
4. Visually inspect the seam to ensure that exact color match is achieved.

B. **Same Pallet.**

1. Take all sheets for the job from the same pallet.

C. Numbers on Sheets

1. Check that the last four digits of this code are within ±50 numbers of each other.

Figure 3.1.1.A

Refer to the 7-digit ink-jet numbers, sequence number or the labels on the underside of the sheet.

Periodically labels are found on the underside of sheets. This is rare and should be a temporary condition.

3. Be sure that this is the case for all individual sheets that are to be seamed together.
4. In the case where the ink-jet number or label is missing from a sheet within a complete pallet, it is most probable that the sheet will still be from the same batch as the others in the pallet. Complete a trial color match inspection (see below) before commencing a job using this sheet.
5. In the case where ink-jet number or label is present but does not fit within the specified range, color match may still be possible. Complete a trial color match before commencing a job using this sheet.

Note:

The ink-jet numbers always have two numbers identical before changing to the next number.

Helpful Hints:

Either leave the batch numbers on the sheets or record them for each job

Never assume sheets will color match where batch numbers are missing. Always do a trial color match.

When completing a trial color match, complete final visual inspection in lighting conditions similar to that found on the job.

Never inspect in bright light such as direct sunlight.

Helpful Hints:

If color match is found to be unsatisfactory after fabrication, yet batch number and pallet number sequences are as per guidelines, contact your Authorized Distributor of Corian® immediately.

Note:

The pattern on Venaro White sheets is random and may not have the same color and veined intensity between sheets.

3.1.2 COLOR INCONSISTENCY WITHIN SHEET

Inspect the surface of solid colors for any color inconsistency. If blotches are apparent and cannot be worked out of the sheet, call your Authorized Distributor of Corian® for inspection and product replacement where required.

3.1.3 PARTICLES PATTERN IRREGULARITY

Check for pattern irregularities in particulate color sheets. It is especially important to check the areas near the edges of the sheet.

If any obvious irregular distribution of particles is visible to the eye, isolate the sheet for inspection by your Authorized Distributor of Corian®.

DuPont has engineered the particulate Colors of Corian® to have random particle distribution throughout the sheet, including the thickness. Part of random distribution is that sometimes particles will congregate in one area or will be segregated in another. There is no way to predict this phenomenon, and DuPont feels it is one of the many beauties of Corian®. Since it is an end toward which DuPont strives, random particle distribution is considered neither a product nor a manufacturing defect.

Because of the acrylic resin used for particulate Colors of Corian®, particles slightly under the surface can be seen. So, depending on how deep into the sheet particles may be, particles may appear to be different shades or to be different colors. Also since some colors have different size and color particles, some particles are more visible than others. These features are more examples of the beauty of Corian® and are not defects.

When making long seams for islands or peninsulas, the best pattern match might be obtained by butting edges from the same side of the pallet on consecutive sheets. If pattern match is off, try spinning one of the sheets 180°.

NOTE:

Inspect sheets and shape products carefully before using. DuPont replacement policy *does not* allow for labor on defective material.

3.1.4 LUSTRA SERIES

Lustra Corian® adds a whole new dimensions to the aesthetic characteristics of an already outstanding material. The look of the material changes when viewed from different angles vs the lighting source. The secret of Lustra aesthetics is millions of mirror-like flakes, uniformly distributed throught the translucent acrylic polymer.

The micro-thin flakes are oriented horizontally with the matrix of the polymer. Therefore, the flakes tend to "disappear" when viewed from the edge of the sheet. This creates new, exciting possibilities for "tone-on-tone" effects.

While these features can add a wonderful look to an installation, they can present some areas to consider when fabricating this material. Though some variations of typical fabrication may be needed, there are no special fabrication methods needed for sink or lavatory mounting, thermoforming or finishing.

3.1.5 LENGTH AND WIDTH

Reference length and nominal length of Corian® sheets are the same. The real length of the sheet can vary between +5/8" (13 mm) and –3/8" (6 mm) as per Table 3.1.4.A.

Table 3.1.5.A

THICKNESS	REFERENCE LENGTH	NOMINAL LENGTH	LENGTH VARIATION
1/4" (6 mm)	98" (2,490 mm)	98" (2,490 mm)	97 3/4"-98 1/2" (2,483–2,502 mm)
1/2" (13 mm)	144" (3,658 mm)	144" (3,658 mm)	143 3/4"-144 1/2" (3,651–3,664 mm)
3/4" (19 mm)	144" (3,658 mm)	144" (3,658 mm)	143 3/4"-144 1/2" (3,651–3,664 mm)

3.1.6 THICKNESS

Reference and nominal thickness of Corian® sheets do vary depending on the color family as explained in Table 3.1.6.A.

Table 3.1.6.A

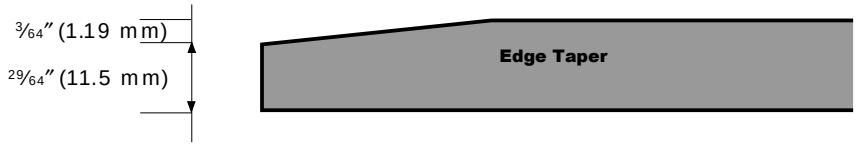
Solid Colors			
Ref. Thickness	Nominal Thickness	Allowable Variation	Max. Variation
1/4" (6mm)	0.250" (6.4mm)	± 1/32" (0.79mm)	3/64" (1.19mm)
1/2" (13mm)	0.485" (12.3mm)	± 1/32" (0.79mm)	3/64" (1.19mm)
3/4" (19mm)	0.750" (19mm)	± 1/32" (0.79mm)	3/64" (1.19mm)

Particulate Colors			
Ref. Thickness	Nominal Thickness	Allowable Variation	Max. Variation
1/4" (6mm)	0.235" (6.0mm)	± 1/32" (0.79mm)	3/64" (1.19mm)
1/2" (13mm)	0.485" (12.3mm)	± 1/32" (0.79mm)	3/64" (1.19mm)
3/4" (19mm)	0.735" (18.7mm)	± 1/32" (0.79mm)	3/64" (1.19mm)

3.1.7 TAPERED EDGE

Where edge taper greater than 3/64" (1.19 mm) exists (as illustrated in Figure 3.1.6.A) and this taper cannot be merged into edging or other elements of the benchtop, call your Authorized Distributor of Corian® for inspection and product replacement where required.

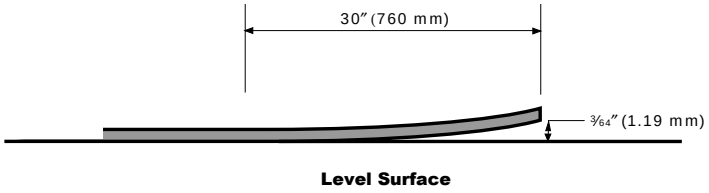
Figure 3.1.7.A



3.1.8 LENGTH WARP

Where warp is greater than 3/64" per 30" (1.19 mm per 760 mm) (as illustrated in Figure 3.1.8.A), call your Authorized Distributor of Corian® for inspection and product replacement where required.

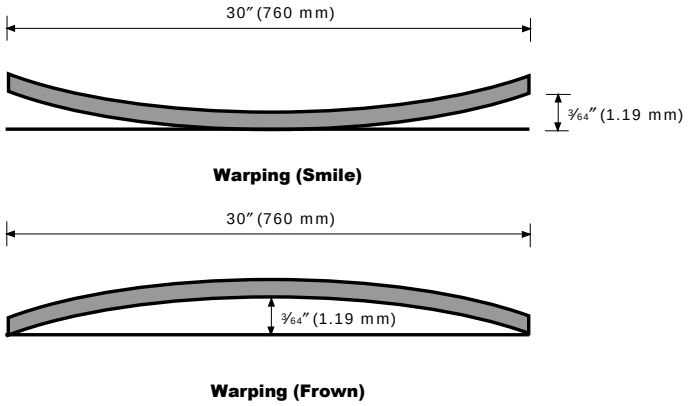
Figure 3.1.8.A



3.1.9 WARP: "SMILES" AND "FROWNS"

Where a sheet deflects on the edges to the shape of a smile or alternatively a frown (i.e., up or down), greater than 3/64" (1.19 mm) (as illustrated in Figure 3.1.9.A), call your Authorized Distributor of Corian® for inspection and product replacement where required.

Figure 3.1.9.A



3.1.10 FACE-SIDE BLACK AND/OR WHITE SPOTS

Where large groups of spots occur that clearly detract from the appearance of the solid color sheet, call your Authorized Distributor of Corian® for inspection and product replacement where required.

Allowable Surface Defects:

Contaminants i.e., black, white or colored particles that are visible against the background, smaller in diameter than the following are permitted:

ITEM	FRACTIONS	DECIMAL (INCHES)	MILLIMETERS
Solid Colors	1/32”	0.031”	0.792
Particulate Colors	5/64”	0.0781”	1.984

3.1.11 FACE-SIDE PINHOLES, VOIDS AND/OR RIPPLES

When minor scratches, pinholes, voids, ripples, bumps, etc., occur in the face side of the sheet, orbital sanding with 120-grit sandpaper for about 3 min/yd^2 (m^2) might resolve the problem.

Corian® is sold as a one-sided product. Irregularities in backside pattern is not a manufacturing defect.

3.1.12 UNDERSIDE PINHOLES, VOIDS AND/OR RIPPLES

Pinholes and depressions less than $^1/_8$” (3 mm) deep and $^1/_4$” (6 mm) in diameter are considered as acceptable.

The same applies for ripples and bumps less than $^1/_{16}$” (1.5 mm) deep.

Where more serious irregularities occur, call your Authorized Distributor of Corian® for inspection and product replacement where required.

3.1.13 EDGE CRACKS AND/OR CHIPS

Corner chips of $^3/_{16}$” (5 mm) wide/deep from the nominal length and edge chips or nicks less than $^3/_{16}$” (5 mm) wide/deep represent the allowance limit.

Where more important surface defects occur, call your Authorized Distributor of Corian® for inspection and product replacement where required.

We recommend using the dark Colors of Corian® for decorative purposes only. When used in high-traffic installations, such as kitchen countertops, dark colors will show white scratches very quickly. It is also very difficult for a consumer to maintain a satisfactory finish on dark colors.

3.2 SHAPE INSPECTION

Table 3.2.A lists the different items you should look for when you make a visual inspection of the Corian® shapes.

Call your Authorized Distributor of Corian® for assistance whenever you are unsure of raw material quality.

Table 3.2.A

SHAPE INSPECTION—ITEMS TO LOOK FOR	SPECIFICATION
broken	
cracks	
incorrect labeling	
particles pattern irregularity	chapter 3.2.1
overflow hardware kit	chapter 3.2.2
overflow accessories	chapter 3.2.3
bowl flange	chapter 3.2.4
black spots/white spots	chapter 3.2.5
physical nonuniformities	chapter 3.2.5
face-side pinholes/voids	chapter 3.2.5
bowl opening dimensions	chapter 3.2.6
drain holes	chapter 3.2.7
bad milling of top flange	chapter 3.2.8
bad milling of overflow	chapter 3.2.8

3.2.1 PARTICLES PATTERN IRREGULARITY

Check for color patches, flow lines or whitish blush.

3.2.2 OVERFLOW HARDWARE KIT

For overflow hardware glued to the Corian® bowl, check if the fitting is loose or broken.

For overflow hardware detached from the Corian® bowl, check if the fitting is broken or missing from the package.

3.2.3 OVERFLOW ACCESSORIES

All vanity basins should include an overflow arrangement (i.e., glue-on overflow, elbow overflow, waste connector and sealing washer).

3.2.4 BOWL FLANGE

Bowl flange thickness shall be greater than $^{9}/_{32}$" (7.14 mm). Flange width shall be uniform within $^{3}/_{32}$" (2.38 mm). Flange top surface shall be flat within $^{1}/_{32}$" (0.79 mm) measured topside-down using a taper gage.

3.2.5 EXPOSED SURFACES

Exposed surfaces shall be free of:

- objectionable scratches
- ridges
- ripples
- pits
- craters
- Voids in seam lines
- air holes
- sink marks when viewed from two feet away
- frost
- white spots (includes impact or bruises marks)
- depressions
- other physical nonuniformities

Foreign Matter and Dirt Particles:

No particle shall be bigger than $^{1}/_{64}$ in.^{2} (0.4 mm^2).

Groups of three or more particles within a 12" (305 mm) diameter circle shall have no particle larger than $^{1}/_{85}$ in.^{2} (0.3 mm^2). If there are only two particles within a 12" (305 mm) diameter circle, they shall be judged separately.

Groups of 10 or more particles shall have no particles larger than $^{1}/_{256}$ in.^{2} (0.1 mm^2).

No raised particle shall be accepted.

No more than 1 white spot within any 3" diameter circle

No more than 7 white spots in each sink or lavatory.

3.2.6 BOWL OPENING DIMENSIONS

All bowl opening dimensions shall be within $\pm^{1}/_{32}$" (±0.79 mm) of stated size.

3.2.7 DRAIN HOLES

All lavatory drain hole diameters shall be $1^{3}/_{4}$" (44.45 mm). All sink drain hole diameters shall be $3\ ^{9}/_{16}$" (90.49 mm).

3.2.8 BAD MILLING OF TOP FLANGE OR OVERFLOW

Check for chips on or around the top flange or overflow outlet. Edge nicks should not be deeper or wider than $^{1}/_{85}$" (0.3 mm).

3.3 ACCESSORIES INSPECTION

Table 3.3.A lists the different items you should check before using any Corian® accessory.

Call your Authorized Distributor of Corian® for assistance whenever you are unsure of raw material quality.

Table 3.3.A

INSPECTION ACCESSORIES—ITEMS TO LOOK FOR	SPECIFICATION
incorrect labeling	chapter 2.6
Joint Adhesive—shelf life	chapter 2.6
Silicone—shelf life	chapter 2.6
Joint Adhesive—component A leaking	chapter 8.1
Joint Adhesive—component B leaking	chapter 8.1
Joint Adhesive—slow-/non-cure	chapter 8.1
Bulk Adhesive leaking	chapter 8.2
Bulk Joint Adhesive—slow-/non-cure	chapter 8.2

3.4 READY-TO-INSTALL LINE INSPECTION

Tables 3.4.1.A and 3.4.2.A list the different items you should look for when you make a visual inspection of the Corian® Ready-To-Install products.

Call your Authorized Distributor of Corian® for assistance whenever you are unsure of raw material quality.

3.4.1 ONE-PIECE VANITY TOP & BOWL

Table 3.4.1.A

READY-TO-INSTALL ONE-PIECE VANITY TOP & BOWL INSPECTION—ITEMS TO LOOK FOR	SPECIFICATION
broken	
incorrect labeling	
sheet and shape defects	chapter 3.1 & 3.2
edge cracks/chips	
voids in glue line	3.2.5
bad milling overflow	3.2.8

3.4.2 TUB AND SHOWER WALL KIT

Table 3.4.2.A

READY-TO-INSTALL TUB & SHOWER WALL KIT INSPECTION—ITEMS TO LOOK FOR
broken/cracked sheets
incorrect labeling
missing pieces
discolored thermoformed corners
damaged, broken trims
damaged, broken soap dish, shower shelf

4.1 SITE INSPECTION

A site inspection is required to ascertain all relevant site details for all Corian® installations.

Steps to Completion:

1. Be aware of how the following affect the Corian® installation:

- ease of access to site
- wall conditions
- electrical and plumbing positioning
- windows and doors/ceiling heights
- any other information that may influence the fabrication and installation of the countertop

2. During site inspection, ensure that consideration is given to:

- site layout; e.g., adjoining rooms, furnishings, etc.
- instructions for the home owner and the installer of appropriate precautions to minimize the effect of dust, noise, impact, etc.

Helpful Hints:

Proper site knowledge prevents fundamental installation problems such as:

Countertops being delivered that are too big for easy access

Position and condition of plumbing, sill and window heights, ducting and wall conditions

Timing and site availability

Customer dissatisfaction due to excessive noise and dust levels.

4.2 TEMPLATES

Templates should be made for all installations of Corian® that incorporate coved backsplashes.

Templates are not essential for other installations of Corian®; however, they are highly recommended.

Templates will give an indication of whether a complete top will fit into the job or whether smaller pieces are needed.

The template must be a true representation of the shape of the top to be produced.

Electronic templating systems are available commercially.

The following is one example of how to template a countertop:

STEPS TO COMPLETION:

1. Templates can be made from the following materials:

   - reusable plywood strips, 4" x 1/4" (102 mm x 6 mm)
   - 1/8" (3 mm) hardboard
   - heavy cardboard sheets
   - M.D.F. board/plywood of varying thicknesses
   - reusable materials such as battens and cross-ties are the most effective for making templates and are very useful for repeat layouts
   - thin sheet board is also often used to mock up the actual top

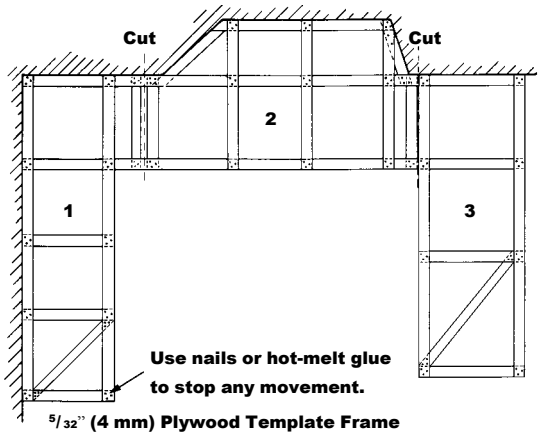
2. Fitting Template to Wall

   - Cut template material to length and rest against wall.
   - Set a scribe to largest gap between template strip and wall, and scribe wall profile on template strip.
   - Trim excess material back to line using a hand plane or saber saw.
   - Check fit of strip to wall. Re-scribe and trim if needed.
   - Use hot-melt glue to secure strips into one long piece.
   - Lay out more strips to make template exact size and shape of countertop.
   - Use template to make sure that countertop can be carried onto installation site.

3. Mark all important information on the template, such as points of support, centerline of sink plumbing, electrical, ducting, centerline of cooktop cutout, seam location(s), finished ideas, type and location of backsplash, and any other details that will ensure fabrication accuracy.

Figure 4.2.A illustrates a well-constructed 5/32" (4 mm) plywood template

Figure 4.2.A



5/32" (4 mm) Plywood Template Frame

Note: A cross-member should be placed where a seam is to be made.

Helpful Hints:

Make corner straps to avoid frame being knocked out of square.

Make sure that the template matches identically the shape of the room, in terms of both squares and contours in walls and corners.

4.3

E - TEMPLATES

There are several good e - template systems on the market. Each one has its own features and benefits that differ from the others. Be sure to make careful investigation should be done before making a purchase so that the system chosen fits in with your way of working.

5.1 EXAMINATION OF PLANS

When examining plans of any installation of Corian®, the objective is twofold:

1. Placing seam positions in a manner that minimizes the use of Corian® sheet and accessory material.
2. Placing seams in positions that maximize product performance.

Examine plans thoroughly and consider alternative options of designing the installation to best fit the plan, keeping very clearly in mind the two objectives listed above.

The quality of estimating directly affects the price to the consumer and the ability to be competitive in the marketplace.

Additionally, the technical design required to adhere to product performance standards is as important as minimizing the balance of material and labor quantities.

5.2 SELECTION OF SEAM POSITIONS

All seams are best butt-seamed; i.e., seams must be placed either perpendicular or parallel to the length of the sheet. All seams in countertop must be reinforced.

To select the best positioning of seams, follow the step-by-step process listed below.

STEPS TO COMPLETION:

1. Consider position of cooktop and/or heat-emitting appliances
Wherever possible (i.e., design and best use of economies), allow seams to be positioned parallel with the front edge of the cooktop or appliance.

Note:
If parallel positioning is not possible, place seam in the most convenient position. Seam may be placed in a cutout if necessary.

2. Consideration of dishwasher
Wherever possible (i.e., design and best use of economies), seams should not be positioned over a dishwasher.

Note:
If a seam is required over dishwasher, the ends of the reinforcing strip must be supported.

3. Consideration of inside corners

Wherever possible (i.e., design and best use of economies), allow seams to be offset a minimum of 3 times the inside corner radius. For example, if inside corner radius is 1/2" (13 mm), offset seam at least 1 1/2" (38 mm).

Note:

If this is not possible, specify a Corner Insert Inside Corner.

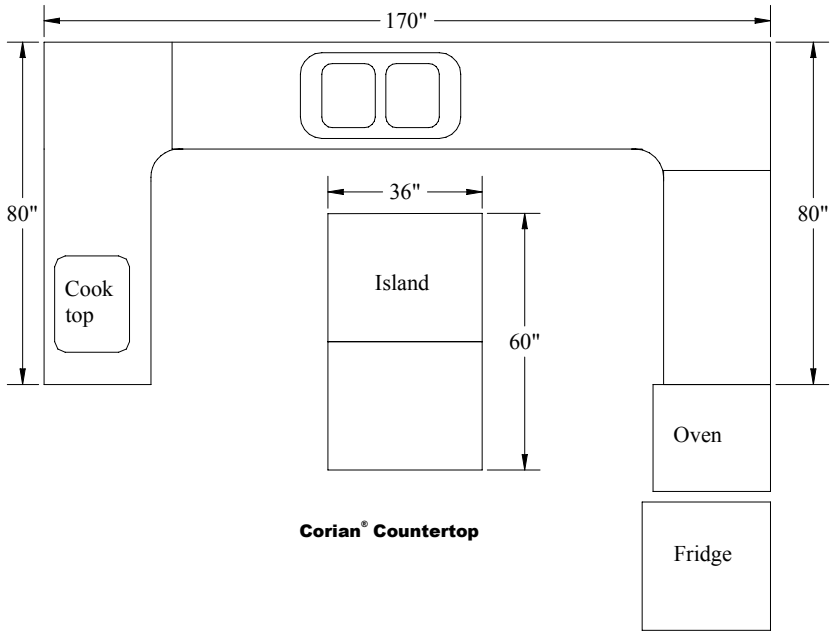
4. Consideration of on-site seams and size of transportable parts

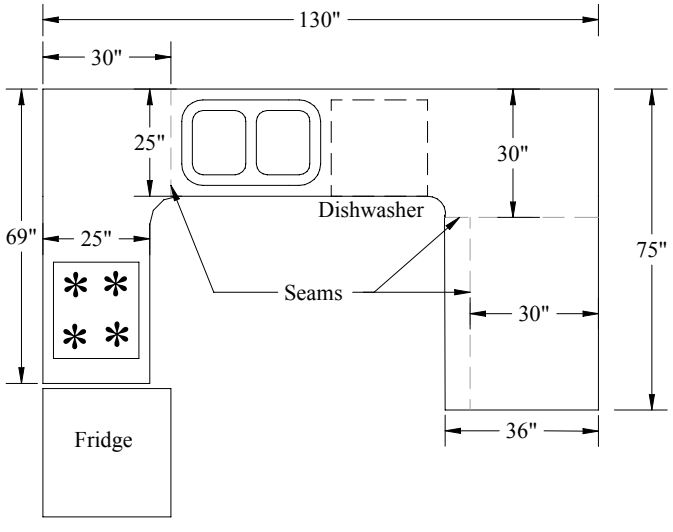
Give careful consideration to the size and weight of transportable parts and their impact on non-preferred on-site seams.

Use information from the site inspection to ascertain the ideal balance of these two conflicting issues.

5. Consider the diagrams illustrated in Figure 5.2.A and 5.2.B as good examples of optimizing the planning of seam positions.

Figure 5.2.A





Helpful Hints:

Corian® Joint Adhesive creates an inconspicuous bond between two sheets; the seam has marginally less strength than the body of the sheet.

Because of this, seams must be reinforced.

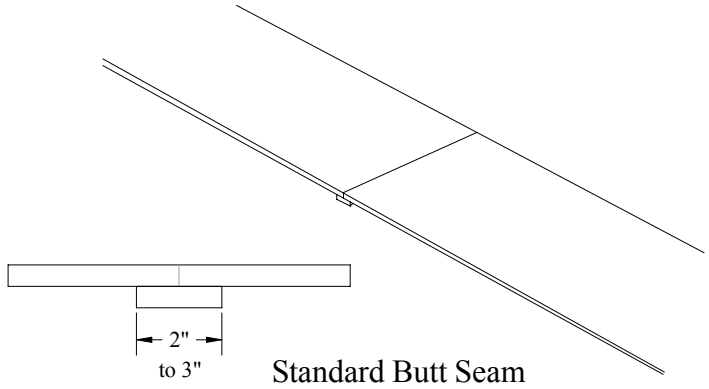
Where possible, the on-site seams should be minimized and positioned in places where maximum clamp pressure on-site is possible, as well as being away from appliances.

5.3 TYPES OF SEAMS

There are two recommended types of seams for Corian®:

1. Standard butt seam made with Joint Adhesive

Figure 5.3.A



Standard Butt Seam

All standard butt seams must be reinforced directly under the seamed area to provide maximum strength. The reinforcing strip must be continuous, flush with both ends of the seam, fully adhered with Joint Adhesive for Corian® and supported on both ends.

2. Silicone seams

On some occasions, seams made of silicone are acceptable. For example, a silicone seam will work well to adhere the narrow strip behind a slide in or droip in range.

STEPS TO COMPLETION:

Select the appropriate seaming method for each seam in accordance with its position in the installation.

Helpful Hints:

Silicone seams can act as expansion joints where more expansion and contraction is needed.

6.1 CUTTING LIST

The key to successful and profitable installation of Corian® is a clear understanding of every cut and seam.

This will ensure economies of scale in material use, minimize risks of incorrect cuts occurring and thus additional expense.

A comprehensive cutting list is essential to cost-effective fabrication of Corian®. From job templates or job drawings, calculate the best yield with seam placement and installation in mind.

STEPS TO COMPLETION:

1. Get job drawings from office.

2. From plan drawings, determine the quantity of raw sheet and shape material required, including all individual pieces. Don't forget to allow for saw cuts and a minimum 1/8" (3 mm) total gap for expansion.

3. Draw diagrams of the sheets to scale, and draw on the diagram all parts required to fabricate the planned job.

4. Clearly number all parts and transfer these numbers back to the plan for cross-reference.

Helpful Hints:

Handle semi-cut sheet with extreme care to ensure no breakage occurs. Ripping or cutting is a violent process; Corian® is at its most fragile when in semi-fabricated state.

Controlling powerful machinery through logical steps means that expensive and valuable material arrives on the workbench for further processing in manageable and first-class order.

The process detailed above not only ensures simple and logical processing, but also provides you with protection against creating minor sheet imperfections such as nicks and cuts.

At a later stage, when the installation is exposed to stress, these imperfections can become a point of weakness and may result in product failure.

7.1 CUTOUT TEMPLATES

The use of an accurate template is one of the most essential elements to the successful completion of a cutout in Corian®.

For the completion of a cooktop cutout, a template is required to suit the installed model.

Complete the construction of a sink or cooktop template using standard good carpentry practice, ensuring the materials used do not shrink, deflect or warp, but instead provide a true and long-lasting guide.

Note:

The minimum inside corner radius for all cutouts in Corian® is 3/16" (5 mm). However, when making a cooktop template, the greater the radius, the greater the strength of the cutout corner. The radius should, therefore, be made to the maximum diameter that the flange of the cooktop will allow.

The gap between the body of the underbox and the edge of the cutout should be a minimum of 1/8" (3 mm) on each side.

For popular cooktop and sink models, it is advisable to make more than one template of each model.

Templates for drop-in sinks, cooktops, and SUB mounting of Corian® sinks and lavatories can be made by using one of the following methods:

Note:

All methods require the use of a 3/8" (10 mm) or 1/2" (13 mm) router bit and a 1" (25 mm) template guide. Be sure that template material is thicker than the template guide.

7.2 MAKING CUTOUT TEMPLATES

Drop-in Sinks

Note:

This procedure works best with a 1/2" (13 mm) bit.

- Select the material for the template and cut to size. Make about 6" (152 mm) larger in each direction than the sink or lavatory.
- Turn sink upside-down and center on the template.
- Using a pencil, trace around the perimeter of the sink and set sink aside.
- Mark the centerline of the sink in each direction on the template material.
- Use a saber saw to make the cutout in the template. Be sure to remove all of the traced line.
- Sand template smooth and mark with the sink model and manufacturer.

Seamed Undermount Bowls

- Select template material and cut to size.
- Wrap upper edge of inside of bowl with two layers of masking tape. Make sure that the tape is laying flat with no wrinkles.

- Use hot-melt glue on flange of sink to fasten sink to template material.
- Carefully drill a hole away from the flange towards the center of the sink.

Caution: Do not drill into the bowl flange.

- Install a flush-cut laminate trimmer bit in a router, and set depth so that the roller bearing is about 1/32" (0.8 mm) below the bottom of the template material.
- Carefully rout around the inside of the bowl.
- Spray denatured alcohol on the hot-melt glue to loosen it, and separate bowl and template. Be sure to remove all hot-melt glue from bowl flange.
- Sand around inside of cutout to remove splinters and the ease edges of opening.
- Mark template with bowl model and manufacturer.

Making a Hard Template from a Paper Pattern

Note:
This procedure works best using a 3/8" (10 mm) bit and 1" (25 mm) template guide.

- Locate paper template, 3/8" (10 mm) router bit and 1" (25 mm) template guide.
- Locate solid line on paper template representing the shape and size of the cutout opening.
- Set a compass to 3/8" (10 mm), the diameter of the router bit. Scribe a line around the inside of the solid black cutout opening line of the paper template.
- Use a scissors or a sharp construction knife to carefully cut paper template on the scribed line. Save the inside piece.
- Carefully trace the shape of inside paper piece onto a piece of plywood.
- Use a saber saw to cut out the shape. Stay just outside of the line.
- Sand the plug back to the line. Make plug as smooth and perfectly shaped as possible.
- Mark plug for bowl model, manufacturer, bit and template guide size.
- Select material for the template and cut to size.
- Place template material on sturdy supports and clamp securely.
- Center plug on template material, and screw through plug and template material into supports underneath.

- Use a router equipped with a 3/8" (10 mm) bit and 1" (25 mm) template guide to carefully rout around the outside of the plug. Remember to go left to right (counterclockwise) around plug.
- Sand template smooth to remove splinters and to ease edges of opening.
- Mark template for bowl model, manufacturer, bit and template guide size.
- Set plug aside to remake template when needed.

7.3 MAKING CUTOUTS

Cutouts in Corian® are best done in the shop, where the fabricator has the best working conditions. Sometimes cutouts must be made on the job, but this is the least desirable way due to dust considerations.

A third alternative is to make a "partial cutout" in the shop to leave most of the dust in the shop. The top is then transported to the job where the installer completes the cutout.

STEPS TO COMPLETION:

1. Select the proper cutout template and clamp securely on countertop.
2. Rout an elongated "C" around the inside of the template along the back and front of the countertop.
3. Wrap the rout up each side of the cutout about 3" (76 mm) to 4" (102 mm), or out far enough to clear any obstacles on the job. See Figure 7.3.A.
4. Leave the center intact for added strength during transportation.

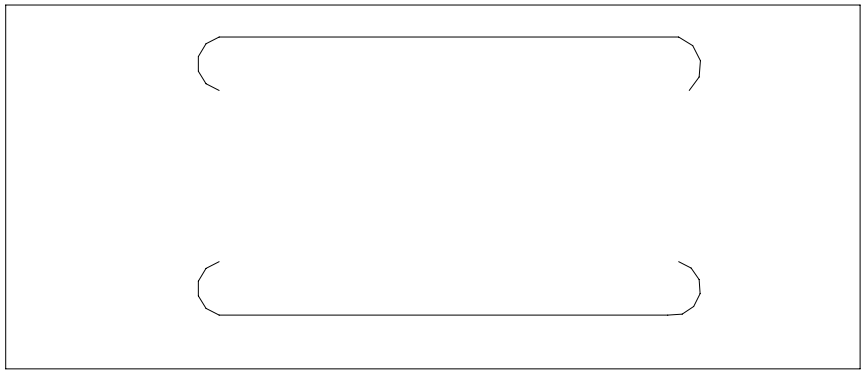


Figure 7.3.A

7.4 HIGH-STRENGTH CUTOUTS

DuPont requires that all cutouts for heat-generating appliances be **high-strength cutouts.** This technique is the best and strongest way known to avoid cracking around cooktops. The technique described is patented only by DuPont.

The upper and lower edge of the cutout must have a 1/16" (1.5 mm) radius and the cutout must be wrapped with .004" (0.1 mm) aluminum conductive tape.

Note:

High-strength cutouts are required for any range style that has a flange that sits on the countertop. Freestanding ranges do not require high-strength cutouts.

STEPS TO COMPLETION:

1. Select the pattern.

NOTE: Measure the appliance flange width. Be sure to measure to whatever sticks out furthest from the appliance box.

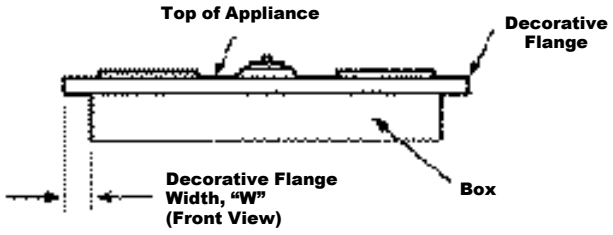


Figure 7.4.A

Select the pattern you will use to make the wooden plug by referring to the chart. The patterns are included at the end of this section. Keep this pattern as your master and make same-size copies as needed. Do not reduce or enlarge.

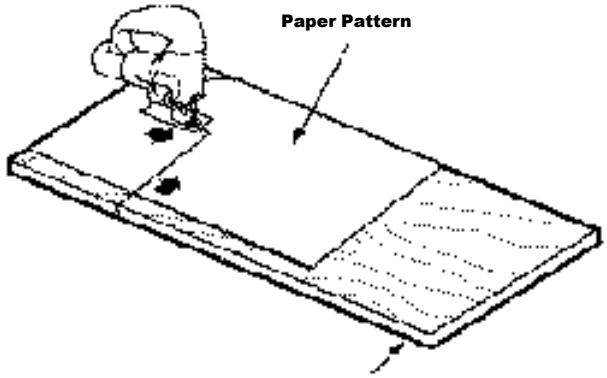
FOR FLANGE ("W") WIDER THAN	AND UP TO	USE PATTERN
5/16" (8 mm)	1/2" (13 mm)	1
1/2" (13 mm)	3/4" (19 mm)	2
3/4" (19 mm)	1 7/16" (37 mm)	3
1 7/16" (37 mm)	Above 1 7/6" (37 mm)	4

Note: If the cooktop flange is 1/4" or less simply reinforce the corners.

2. Make the wooden plug.

Attach the paper pattern to a piece of 8½" x 24" x ½" (220 mm x 600 mm x 13 mm) plywood. Line up the paper pattern against the plywood edge. Cut just outside the pattern line with a jigsaw, so that the line remains on the plug. Carefully sand back to the pattern line. The plug should be extremely smooth and perfectly shaped. Mark the plug for size, so you can use it again.

Figure 7.4.B



3. Make either a corner or full template.

Place the plug on a piece of 13" x 24" x ½" (330 mm x 600 mm x13 mm) plywood, and nail or screw it to the plywood.

Securely clamp the plywood to a firm work surface.

Using a ⅜" (10 mm) diameter router bit and a 1" (25 mm) diameter template guide, carefully cut around the plug.

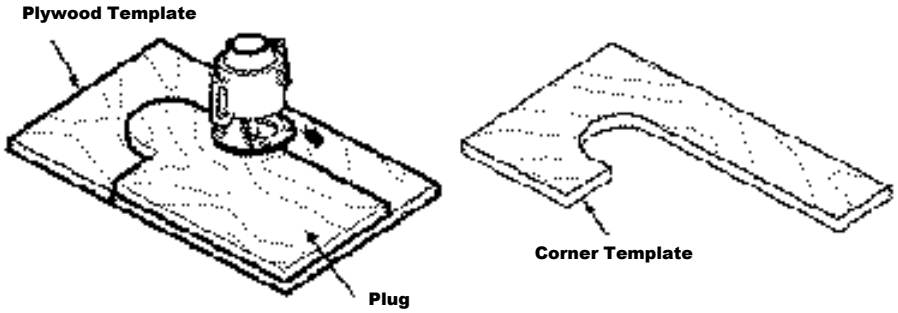
Sand the template until it's smooth.

Mark the template for appliance flange size and bit and router template guide diameters, so you can use it again.

Note:

The high-strength cutout method was designed around a ⅜" (10 mm) bit and 1" (25 mm) template guide. Changing sizes will affect the results.

Figure 7.4.C

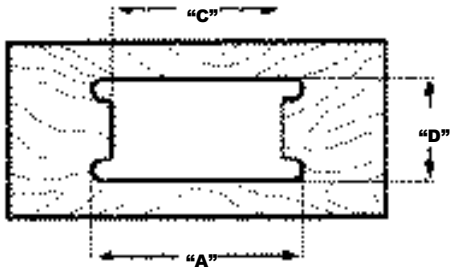


To make a full template:

Follow the same steps to make a full template, routing one corner at a time.

Note:
Dimensions "C" and "D" in the figure should provide 1/8" (3 mm) minimum clearance between the appliance and the cutout. See manufacturer's literature for appliance dimensions.

Figure 7.4.D

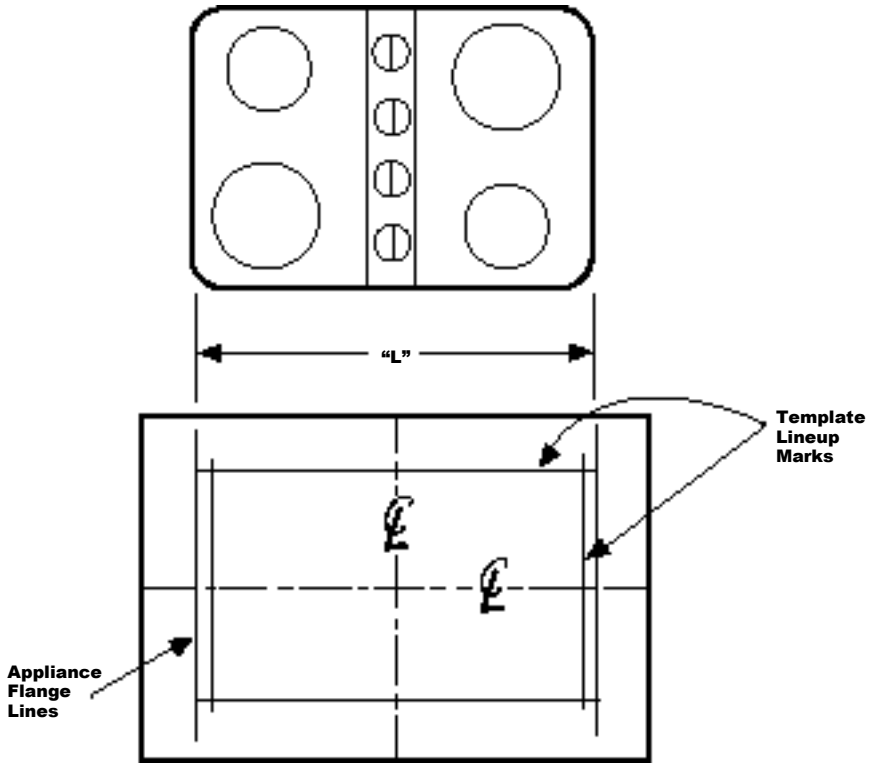


4. Mark the sheet of Corian®.

Measure the overall appliance length (L).

On a sheet of Corian®, draw the appliance length lines and template lineup marks, allowing 1/8" (3 mm) to 1/4" (6 mm) clearance between the appliance and the cutout. See manufacturer's literature for appliance dimensions.

Figure 7.4.E



**Sheet of Corian®
(Top View)**

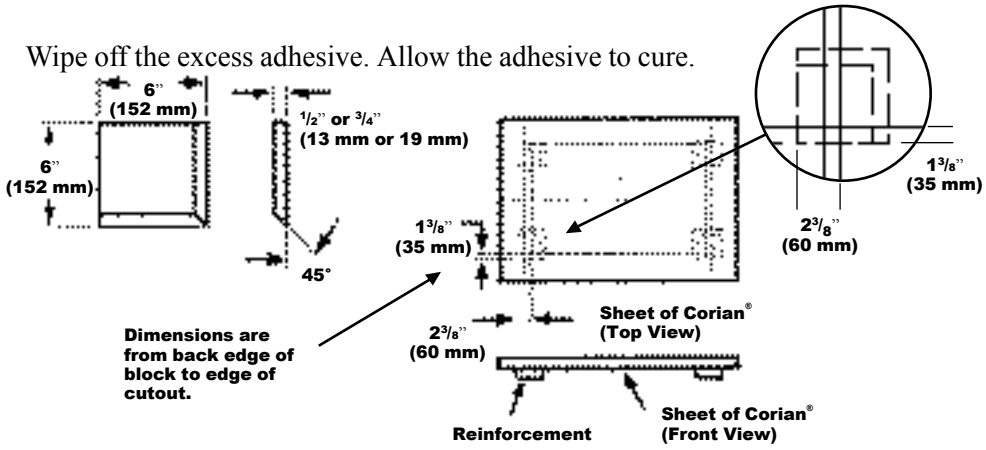
5. Reinforce the corners of the appliance cutout.

Make four blocks from Corian®. Bevel edges of blocks to a sharp point. Though only two edges need to be beveled, all four edges may be beveled.

Apply Corian® Joint Adhesive to the entire surface of each block; avoid any gaps. Adhere the blocks to the bottom of the sheet where the cutout corners will be.

Wipe off the excess adhesive. Allow the adhesive to cure.

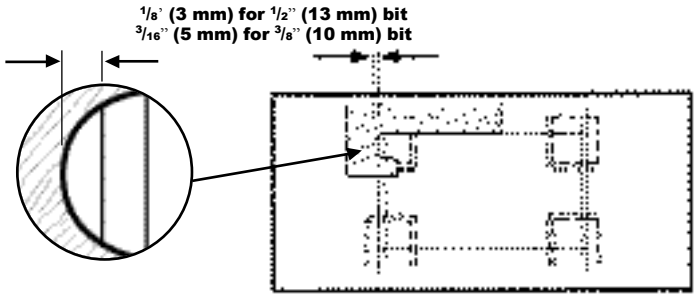
Figure 7.4.F



6. Rout the cutout.

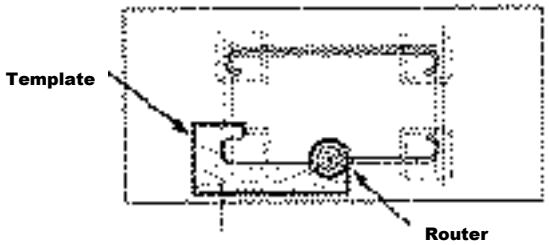
Line up the template on the reinforced sheet of Corian®.

Figure 7.4.G



Rout the four cutout corners and the length with the same size bit and template guide you used to make the template. Rotate the template as necessary.

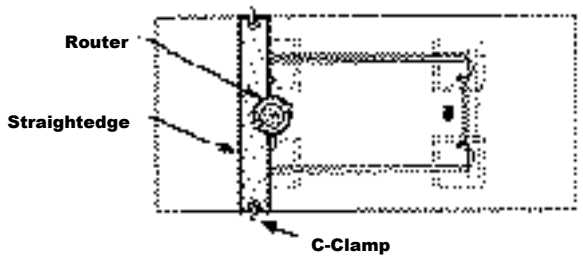
Figure 7.4.H



Clamp a straightedge to the width template mark and rout the edge. Repeat for the second edge.

Note:
For a full template, you can use a continuous routing operation.

Figure 7.4.I



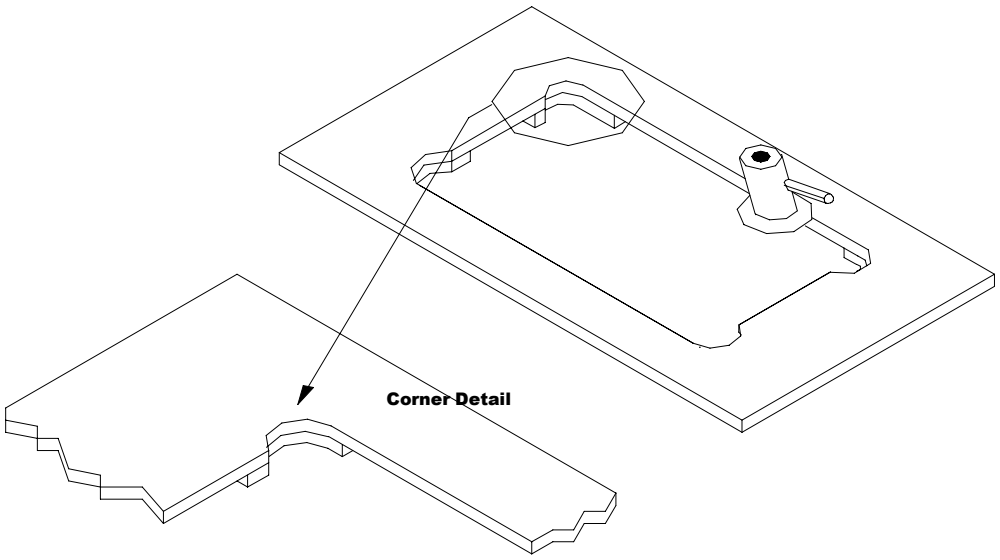
7. Finish the cutout.

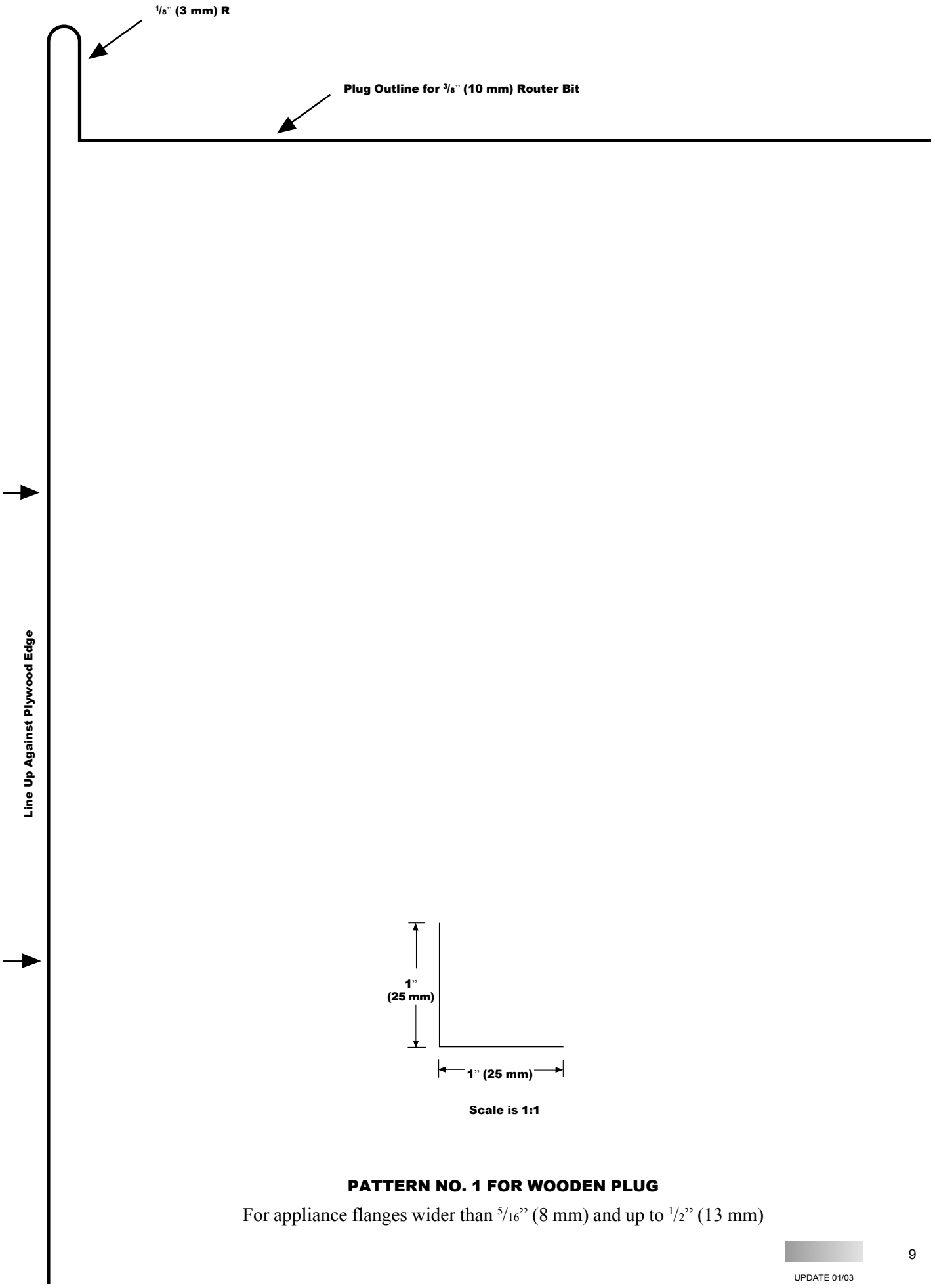
Round off the edges of the cutout to a 1/16" (1.5 mm) min radius.

Sand the entire cutout smooth. Use 150-grit or finer paper.

For appliances, apply .004" aluminum conductive tape around the cutout. Conductive tape must start 1/4" (6 mm) below the underside of the countertop, including the corner blocks, and extend up edges and over surface of countertop enough to run past the outside edge of the decorative flange of the cooktop. Trim off excess tape after cooktop is properly installed.

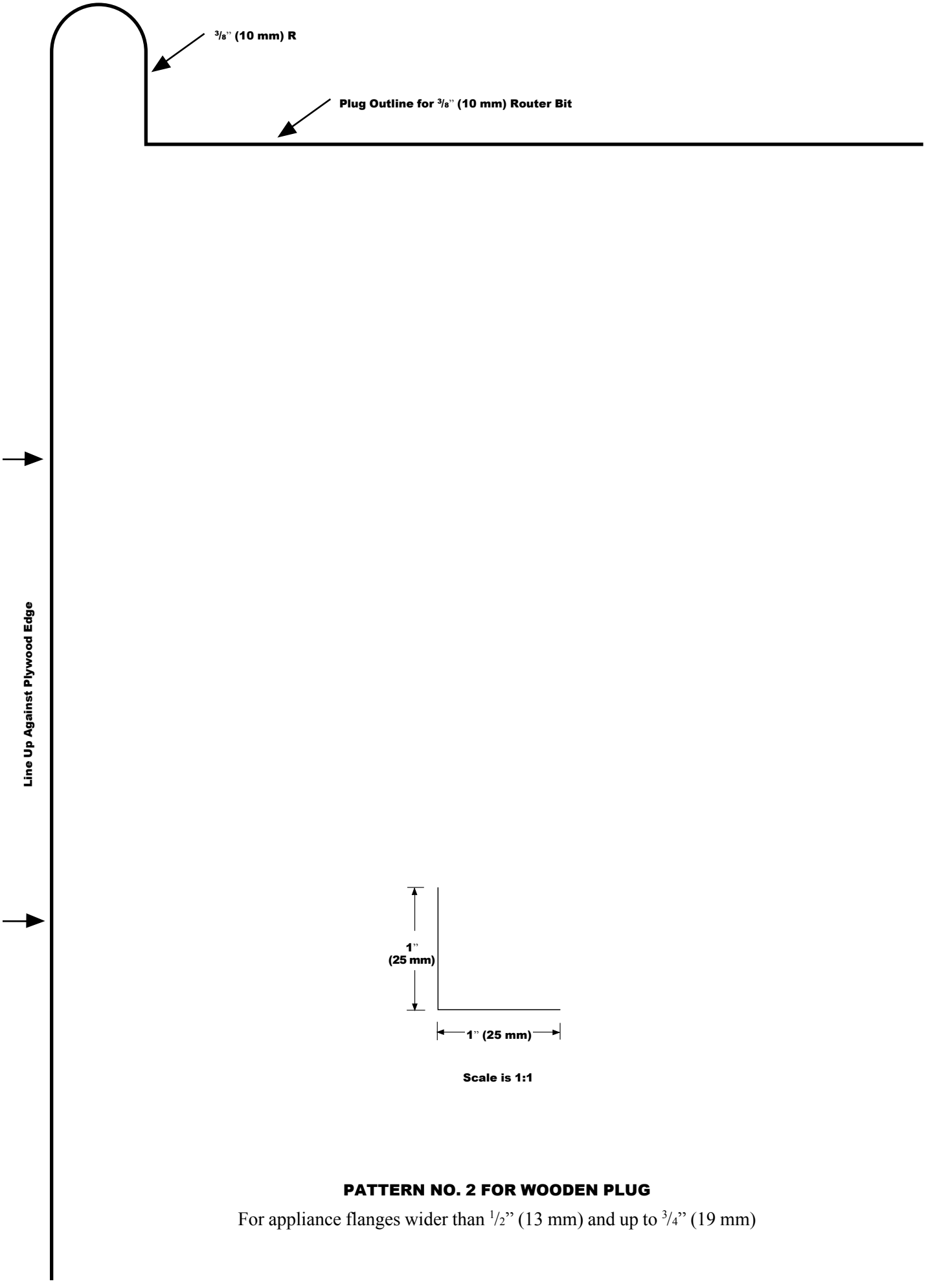
Figure 7.4.J





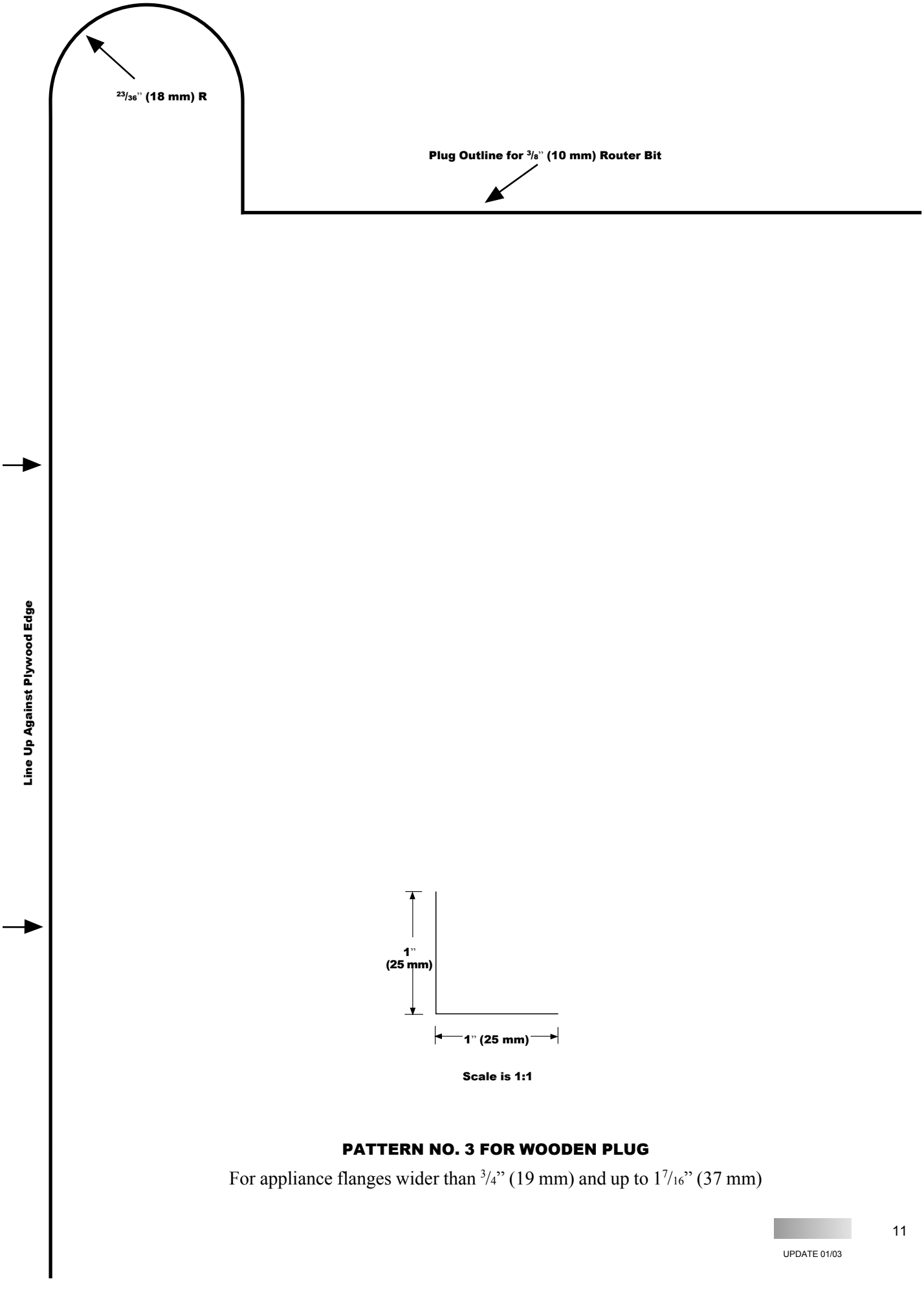
PATTERN NO. 1 FOR WOODEN PLUG

For appliance flanges wider than 5/16" (8 mm) and up to 1/2" (13 mm)



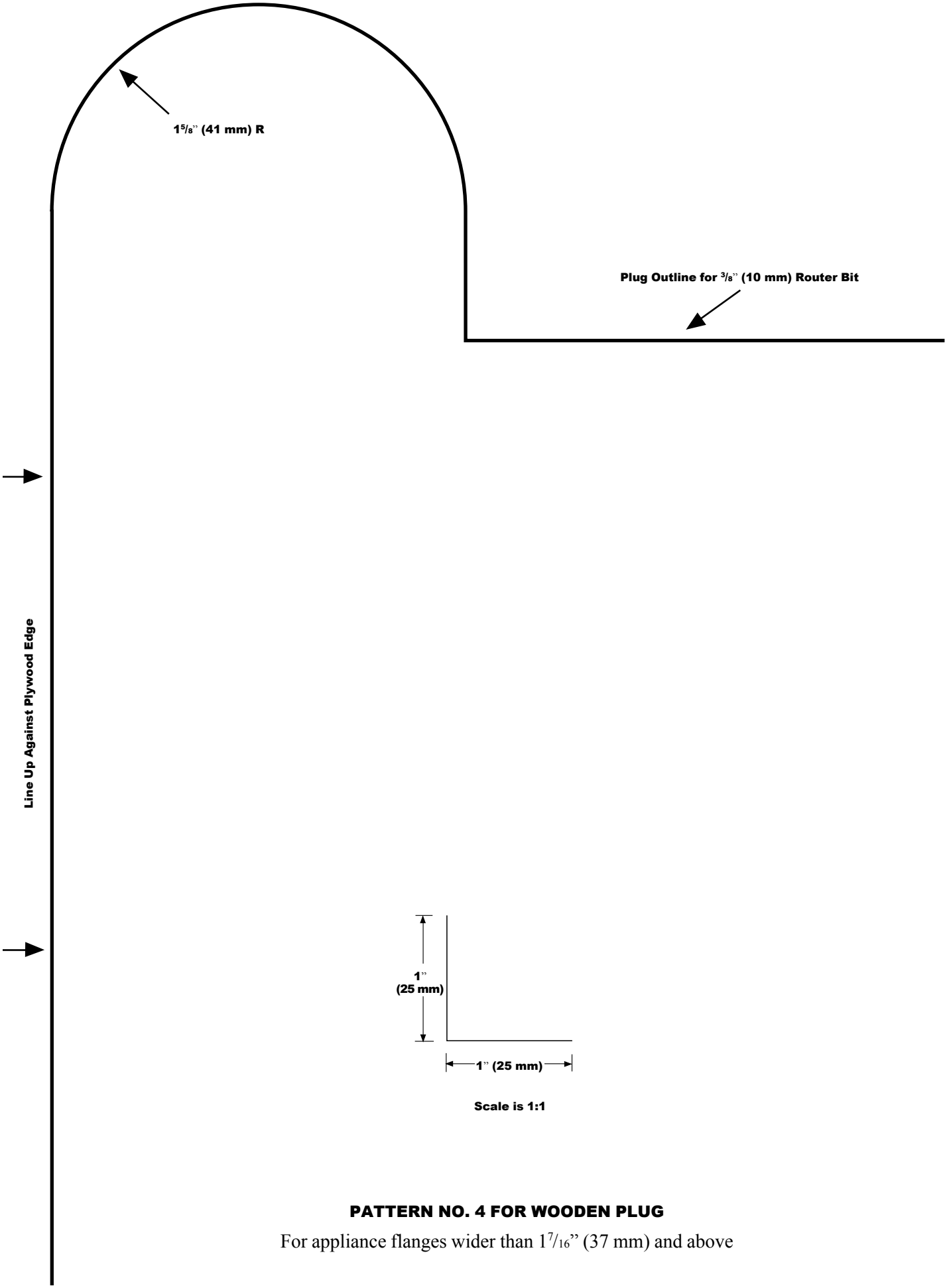
PATTERN NO. 2 FOR WOODEN PLUG

For appliance flanges wider than 1/2" (13 mm) and up to 3/4" (19 mm)



PATTERN NO. 3 FOR WOODEN PLUG

For appliance flanges wider than 3/4" (19 mm) and up to 1 7/16" (37 mm)



PATTERN NO. 4 FOR WOODEN PLUG

For appliance flanges wider than $1\frac{7}{16}$" (37 mm) and above

8.1

CORIAN® JOINT ADHESIVE SYSTEM

As an integral part of its sheet and shape products, DuPont has developed a special adhesive.

The DuPont Corian® Installed Warranty covers seam performance, not appearance.

Corian® Joint Adhesive comes in two parts, labeled Component A and Component B.

All Corian® Joint Adhesives are best used by date printed on the container

The key to the code is illustrated below:

Cameo White 0120091	
01—January	(first two digits indicate the month of expiration, 01–12)
2009	(next four digits indicate the year of expiration)
1—Batch #	(last digit is irrelevant in terms of use-by date)

Corian® Joint Adhesive is produced in a range of specific colors to match with sheet and shape product. An exact color match cannot be guaranteed. The best looking seam will be obtained by careful seam preparation. See Sec.10.1

Long term storage of tubes should be done with the tube on its side. Also, always remove the mixer tip and replace the plugs if the adhesive will not be used within 8 hours.

Helpful Hints:

Follow all instructions attached to the tubes. Pay particular attention to the safety and first aid details.

Do not use adhesive that is past the use-by date.

Protect adhesive from sunlight or extreme heat when transporting it to the job site.

If adhesive is cold, allow to warm to room temperature before using.

When using a manual dispenser, simulate the constant pressure of an air powered dispenser. Changes in pressure from pressurizing the cartridge will affect mixing and set time.

To make adhesive flow faster, trim the mixer tip

In warmer weather, mixing time may be reduced to maximize working time.

8.2 BULK JOINT ADHESIVE SYSTEM

The Bulk Joint Adhesive is, as the name implies, DuPont Joint Adhesive packaged in bulk pack cartridges.

Mixing instructions are as per, "**Cartridge Preparation"**. Storage conditions are listed below. Shelf life is also two years for the bulk.

The bulk system is most effective where large volumes of glue are required.

The bulk adhesive cartridge has a lot # or use-by date printed on the label.

The key for the code is illustrated below:

0520091	
05	(indictes month of expiration 01 - 12)
2009	(indictes year of expiration)
1	Batch # (irrelevant in terms of use-by date)

Long term storage of bulk cartridges should be such that the cartridge is horizontal.

To prepare for the use of the bulk system, ensure that you have all the parts required to make it run properly:

- pneumatic bulk adhesive gun
  - –air hose
  - –pressure gauge
  - –air bottle (to make system portable)
  - –mixer tips
- bulk adhesive manual gun
  - –mixer tips

Cartridge Preparation:

1. Let cartridge stand on end for about 30 minutes before using.
2. Keeping cartridge upright, put into dispenser with small tube going in first.

Note:
Plate directly under threaded area fits into slot on front of dispenser. Be sure cartridge fits into chamber completely.

3. Remove retainer cap. Slip off slotted washer and remove chamber plugs. Set aside plugs for later use.
4. Connect dispenser to air source and adjust pressure to about 25 PSIG.

Note:
Dispenser regulator does not have a gauge. If air line does not have a gauge, turn regulator knob on gun counterclockwise until it stops. Then turn knob about three full revolutions clockwise to get 25 PSIG.

5. Keeping dispenser upright, hold end of cartridge over paper cup. While pointing dispenser away from anyone, pull trigger to allow any air trapped inside cartridge to escape and to fill chambers. Release trigger. If using manual dispenser, squeeze handle slowly until air is gone and chambers are full, then push tab on back of dispenser.
6. Put mixer tip in place.

Note:
Mixer tip will only fit one way. Slip retainer nut over mixer tip, and lock it securely in place by giving a 1/4 turn clockwise. Mixer tip fit is very snug. Be sure it is in proper position before using, or leaking around tip may occur.

7. Adjust pressure to desired setting and run out a 4" (102 mm) bead of adhesive onto paper towel. Dispenser can be set down for about 5 minutes before a tip change is needed. If, after setting, flow begins slowly or adhesive looks thick, either run out adhesive until normal thickness is seen, or change tip.
8. To remove cartridge from air dispenser, press red button on back of hand grip until piston is completely retracted. Press small black button on underside of dispenser housing to dislodge cartridge.

9. To remove cartridge from manual dispenser, press lever behind handle and, retract the plunger manually. Press small black button on underside of dispenser housing to dislodge cartridge.

10. To store unused portions, first remove cartridge from dispenser, remove retainer cap and discard mixer tip. Replace plugs in end of cartridge, screw on retainer cap and secure plugs with slotted metal washer.

Helpful Hints:

If you have not used the entire cartridge and you wish to store for further use:

Remove the tip and retaining nut, seal the cartridge with the plug, replace the retaining nut and replace slotted washer.

The Bulk Joint Adhesive System is equivalent to 10 small tubes and is efficient and convenient.

As the Bulk System is normally used for large glue jobs, it is important that all preparation is complete before gluing commences.

The manual cartridge gun eliminates the need to use the air hose system, as it works by hand pressure only. For best operation, simulate the smooth continuous pressure of an air-operated dispenser.

8.3 50 ML CARTRIDGE

DuPont offers a 50 ml. cartridge which like the bulk cartridge, has separate component chambers, requires a dispenser and a tip, and is re-sealable. One cartridge typically contains sufficient adhesive for two deck seams or one large kitchen sink.

Storage conditions are as per previous adhesives.

The expiration date is printed on the label as illustrated below:

0520091	
05	(indictes month of expiration 01 - 12)
2009	(indictes year of expiration)
1	Batch # (irrelevant in terms of use-by date)

Cartridge Preparation and Use:

STEPS TO COMPLETION:

1. Let cartridge stand on end for about 30 minutes.

2. Pointing cartridge up,, place cartridge in dispenser and close the black latch. The cartridge only fits in one way.

3. Remove cap and save. Install mixer tip and twist to lock in place.

Note:

Mixer tip will only fit one way. Line up the raised point on mixer tip cap fits into the v - notch on cartridge. Spin the cap 1/4 of a turn clockwise to lock tip into place.

4. Squeeze dispenser handle slowly and dispense a bead about 1/8" wide and the length of the tip onto a paper towel or scrap piece of laminate.

5. Dispenser can be set down for about 5 minutes before a tip change is needed. If, after setting, flow begins slowly or adhesive looks thick, either run out adhesive until normal thickness is seen, or change tip and repeat Step 4.

6. To remove carridge from dispenser, press tab on back of dispenser and retract plunger and lift black latch.

7. To store unused adhesive, remove tip and replace cap.

8.4 ADHESIVE STORAGE

To insure the longest shelf life, the adhesive should be stored in the dark, at room temperature (70° F., or 21° C.) or lower. In hot climates a refrigerator may be used but is not necessary. A dark, air-conditioned room will suffice.

Both the 50 ml and 470 ml cartridges suould be stored on their sides

Note:

Storing cartridges with tip in place may cause blockage making it very difficult to re-use remaining adhesive. Always remove the tip and replace the plug for storage.

8.5 ADHESIVE DISPOSAL

It is important to dispose of joint adhesive in a manner which is consistant with our responsibility to the environment and which complies with all local, State and Federal regulations. To dispose of the adhesive, mix the left over components. This can be done manually without a mixer tip if desired. Wait until the reaction is complete then dispose of the reacted, solid adhesive.

Caution: Adhesive may become ***very hot*** while reacting. Use heat resistant gloves if container holding reacting adhesive must be handled.

8.6 SILICONE

When using silicone as your primary adhesive system, use a good-quality, mildew-resistant variety.

If the silicone being used is for decorative purposes, a correct color match is recommended. This can be facilitated by using DuPont Surfaces Sealant for Corian® Zodiaq®, and DuPont Wall Surfaces

DuPont produces a range of silicone colors to coordinate with sheet and shape color.

The DuPont Surfaces Sealant has a use-by date listed on the tube.

The key to the code on the label of all cartridges is illustrated below:

JAN 09	
JAN	(indicates the month of manufacture)
09	(indicates the year of expiration)

9.1

TYPES OF SUPPORT

Corian® must be supported on a strong, continuous perimeter support frame that will keep it flat for the useful life of the top.

Varying layouts and overhangs place different challenges on our support systems.

The perimeter support frame can be positioned on-site and the Corian® worktop placed over the frame. This technique allows for exact adjustment and levelling of the frame. It also allows the installer to adjust the seam level for minimum sanding. The parts are dropped into position with the minimum of adhesion to allow for maximum movement.

Another technique is to create a perimeter support frame in the workshop and glue the countertop onto it. Installation and the creation of flat support is then completed by adjustment to frame and worktop as a whole unit. The perimeter support frame must be attached to the Corian® sheet with silicone.

In either case, the support MUST have intimate continuous support with the underside of the countertop. If shimming is needed it must always be done between the support frame and cabinets.

There are several types of materials that may be used in a Corian® frame support. Some common types are:

1. Moisture-resistant M.D.F. board
2. Moisture-resistant plywood
3. Square metal tube stock

Other materials may be used as long as the design incorporating the proposed material passes the test outlined in Section 9.3.2.

Particleboard is not an acceptable support material.

Helpful Hints:

Do not use any material that is not structural in nature. The perimeter support frame must be able to provide support at inside corners and across spans.

Do not use full underlayment. Studies done by DuPont have proven that for horizontal applications, 1/2" (13 mm) Corian® sheet material is better used with frame support for, e.g., heat dispersion as per Graph 9.1.A.

Be sure to make allowances for expansion of support material from heat or humidity.

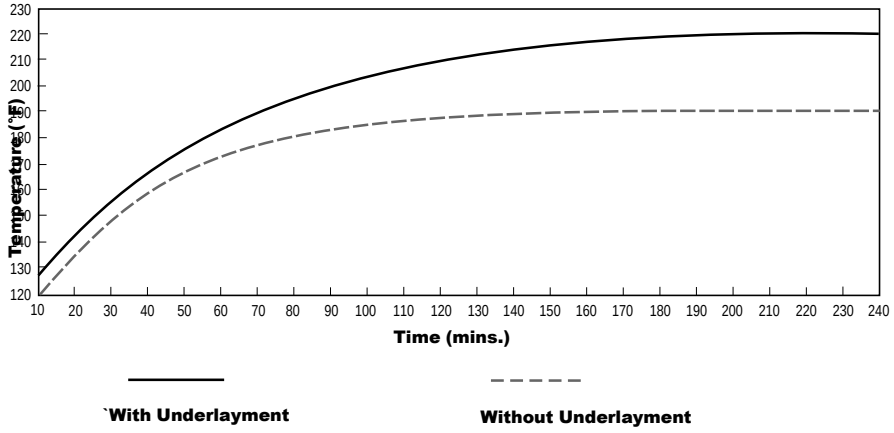
Dustcovers in cabinets can act like underlayment and should be neatly removed, unless the customer objects.

A countertop of Corian® may be placed directly onto cabinets if they:

- are fixed together strongly
- have all the tops in the same plane
- provide strong support
- have all gaps filled in (e.g., dishwasher openings)
- have front-to-back support built in to support cutouts
- hold countertop high enough for drawers and doors to clear the front edge

Graph 9.1.A

Temperature in Corian® Sheet With and Without Underlayment



9.2 CONSTRUCTING A FRAME

STEPS TO COMPLETION:

Wood Strips

1. Plan front-to-back support strips, to coincide with cutouts, and periodic supports in a perimeter ladder structure.
2. Seam the stiles using wooden biscuit seams, serrated dowels or rabbeted seams screwed and glued.
3. Notch front and back rail to accept reinforcement strip.

COUNTERTOP SUPPORT

CONSTRUCTING A FRAME

Figure 9.2.A

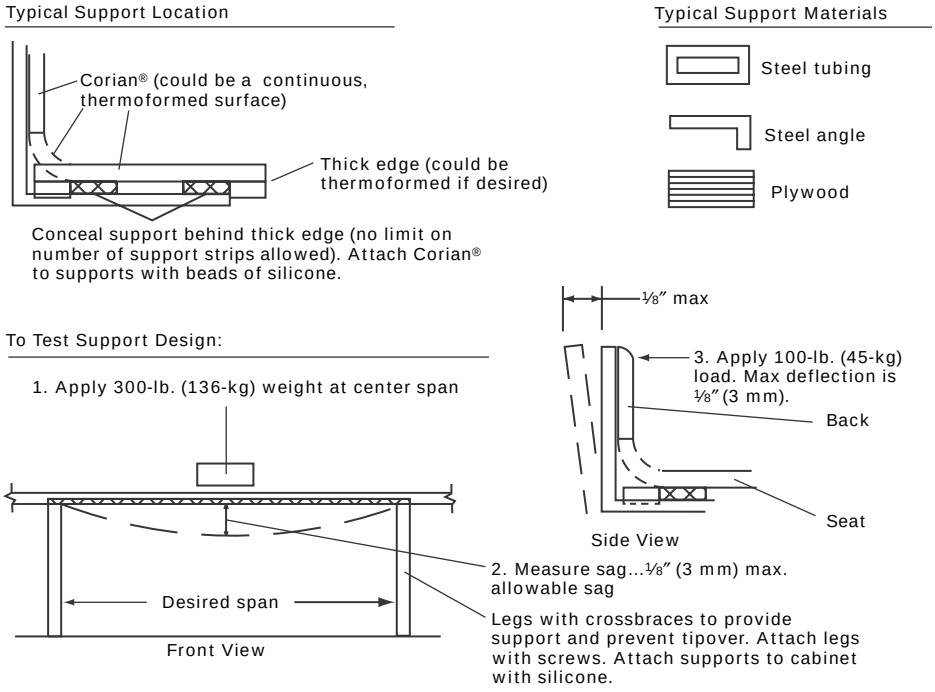
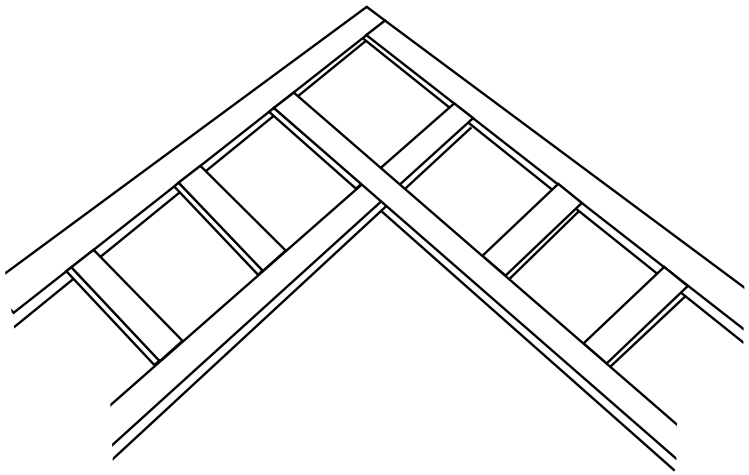

Typical Support Location
Corian® (could be a continuous, thermoformed surface)
Thick edge (could be thermoformed if desired)
Conceal support behind thick edge (no limit on number of support strips allowed). Attach Corian® to supports with beads of silicone.
Typical Support Materials
Steel tubing
Steel angle
Plywood
To Test Support Design:
1. Apply 300-lb. (136-kg) weight at center span
Desired span
Front View
⅛″ max
3. Apply 100-lb. (45-kg) load. Max deflection is ⅛″ (3 mm).
Back
Seat
Side View
2. Measure sag...⅛″ (3 mm) max. allowable sag
Legs with crossbraces to provide support and prevent tipover. Attach legs with screws. Attach supports to cabinet with silicone.

Figure 9.2.B



Ladder Frame Inside Corner

All Solid Sheeting (Constructed Ladder System)

• moisture-resistant M.D.F. board
• moisture-resistant plywood

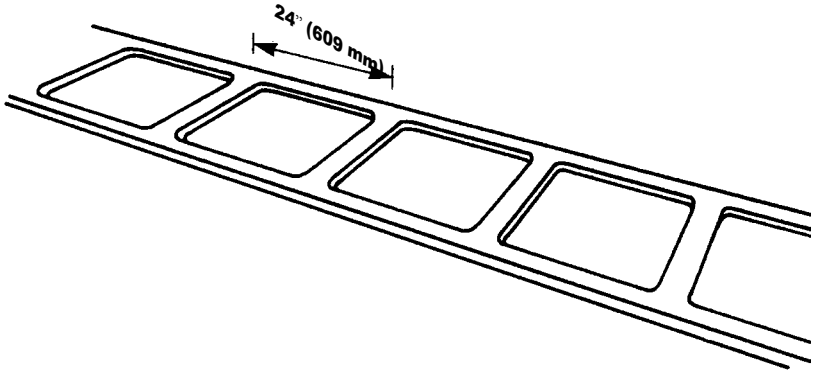
1. Rip raw sheet material into 3"–4" (76 mm–102 mm) strips.
2. Plan front-to-back support to coincide with all cutouts and periodic supports in a perimeter ladder structure as illustrated in Figure 9.2.A.
3. Notch front and back rails to accept reinforcement strip.
4. Join the stiles using screwed or glued wooden biscuit seams, serrated dowels or rabbeted seams.

All Solid Sheeting (Routed Ladder System)

• moisture-resistant M.D.F. board
• moisture-resistant plywood

1. Measure material to length and width from template (remembering to modify width to accommodate buildup, reinforced seams, etc.)
2. Mark on solid core sheets all sink and cooktop cutouts, as well as all divisional supports and seam reinforcement.
3. Using the markings created in Step 2, draw a frame plan on the solid core sheet.

Figure 9.2.C



4. Using a 3-hp router with a single-flute plunge bit and premade router guides (templates), rout out the appliance cutouts and the routed stiles to form a ladder frame structure, and notch front and back rails to accept reinforcement strips. A C.N.C. router can also be used to form this type of ladder frame.

All Metal Frame - 1” (25 mm) Square Tube Stock

STEPS TO COMPLETION:

- Measure and cut tube stock to length from measuring either the template or the underside of the countertop.
- Make allowances for seam supports by using thinner tube stock.
- Place proper support for cutouts.
- Fasten frame together by welding or by using angle brackets and screws.
- Drill holes in frame to be able to screw frame in place on cabinets.

Note: Be sure to allow a minimum 1/16” between perimeter support frame and Corian® edge strips for expansion.

“Third Rail” Support

A third rail support strip may be used. This rail runs parallel to the front and back rail. However, any front to back, or inside corner support **must** take preference. That is ***ALWAYS*** install front to back supports for cutouts and inside corners first. Then fill in the gaps with the third rail.

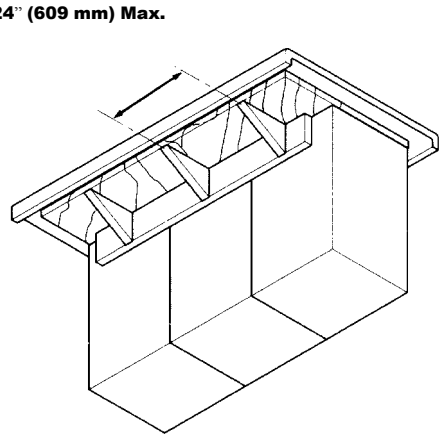
9.3

FABRICATING AND INSTALLING OVERHANG COUNTERTOPS

As a general guideline, support is required for overhangs of Corian® extending more than 6” (152 mm) in 1/2” (13 mm) material and overhangs extending more than 12” (305 mm) in 3/4” (19 mm) material.

Adding thick edges makes the overhang stronger.

Figure 9.3.A



Refer to table 9.3.1.A to determine the type(s) of support to use.

9.3.1
SUPPORT TYPES

Overhang Supports:

Table 9.3.1.A

OVERHANGS EXTENDING	SUGGESTED SUPPORT
½" (13 mm) Corian® Countertop	
0" to 6" (150 mm)	No Additional Support Required
6" (152 mm) to 12" (305 mm)	Plywood Underlayment or Brackets or 1" Square Metal Tube Stock
12" (305 mm) to 18" (457 mm)	Plywood Underlayment and Brackets or 1" Square Metal Tube Stock
18• (457 mm) and over	Legs or Columns
¾" (19 mm) Corian® Countertop	
0" to 12" (305 mm)	No Additional Support Required
12" (305 mm) to 18" (457 mm)	Plywood Underlayment and Brackets or 1" Square Metal Tube Stock
18" (457 mm) and over	Legs or Columns

Note:
The above guidelines are a starting point. Other support systems may be used if they pass the test outlined in Section 9.3.2.

Seamed Overhang Countertops*:

It is recommended to position seams over cabinets rather than in the overhang. Keep seam as far from edge of cabinet as possible.

*All seams must be reinforced.

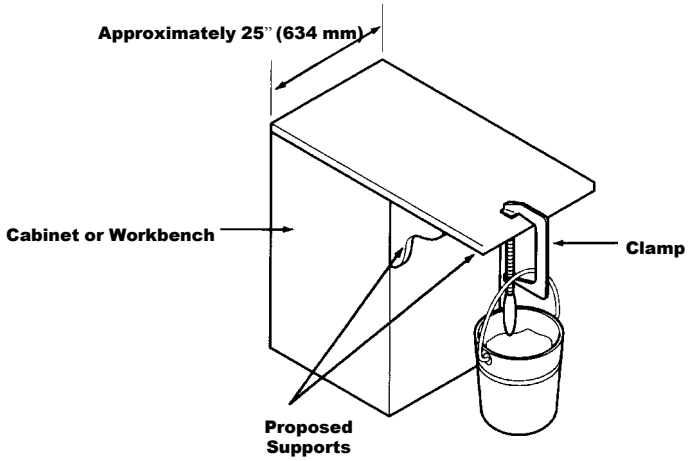
9.3.2
SUPPORT TEST

Testing Other Support Designs:

Other support designs may be acceptable. Fabricators can check the acceptability of their designs by running the following test:

- Install a 25" (634 mm) wide section of Corian® countertop.
- Install the proposed support.
- Hang a 100-lb. (45.36-kg.) weight from the clamp between the supports and 1" (25 mm) from the edge of the overhang.
- Measure the deflection caused by the weight (measure near the clamp). The maximum allowable deflection is ¼" (6 mm).

Figure 9.3.2.A



9.3.3

FABRICATION AND INSTALLATION

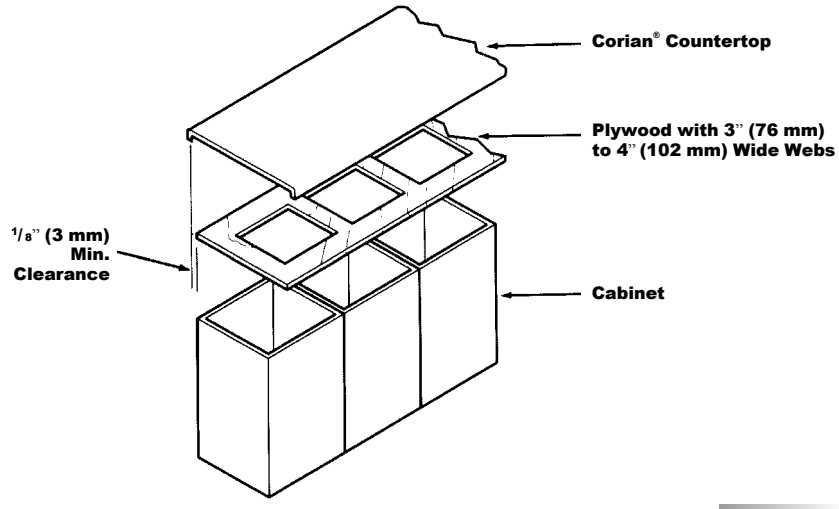
Make the supports:

Plywood Underlayment:

- Position 3/4" or 1" (19 mm or 25 mm) A-C grade plywood or moisture-resistant M.D.F. over the entire cabinet with the "A" side facing the floor, and secure to cabinets with screws.
- Cut out the plywood in the cabinet area, leaving 3" (76 mm) to 4" (102 mm) wide webs over the cabinet walls.
- Leave 1/8" (3 mm) minimum clearance between the plywood and built-up edge.

Do not use full underlayment over the cabinets. Full underlayment can cause the Corian® to overheat so that it may warp and crack.

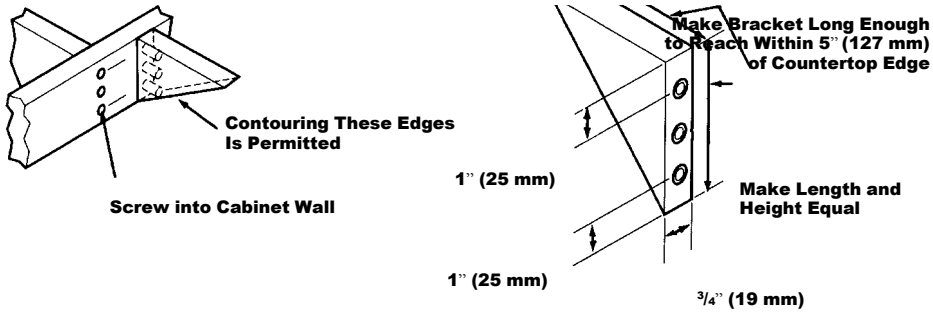
Figure 9.3.3.A



Brackets:

- Determine the number of brackets to fabricate by measuring the cabinet. Brackets should be installed at equally spaced intervals of 24" (609 mm) or less.
- Use a backer plate for the brackets if the side of the cabinet is not sufficient to support the weight of the overhang.
- Pre-made brackets may be purchased from the cabinet manufacturer.

Figure 9.3.3.B


Contouring These Edges Is Permitted
Screw into Cabinet Wall
Make Bracket Long Enough to Reach Within 5" (127 mm) of Countertop Edge
1" (25 mm)
Make Length and Height Equal
1" (25 mm)
3/4" (19 mm)

Seamed Overhangs:

- Fabricate the seamed countertop, putting the seam over the cabinet.
- Position reinforcing strips or edge buildups of Corian® under each end of the seam; then reinforce between the edge buildups.
- Glue with Joint Adhesive, making sure that all seams in the edge are completely filled.
- Cut out the plywood underlayment following the procedure previously described.

As a last resort, the seam may run perpendicular to, and extending from either the back or side of the cabinet.

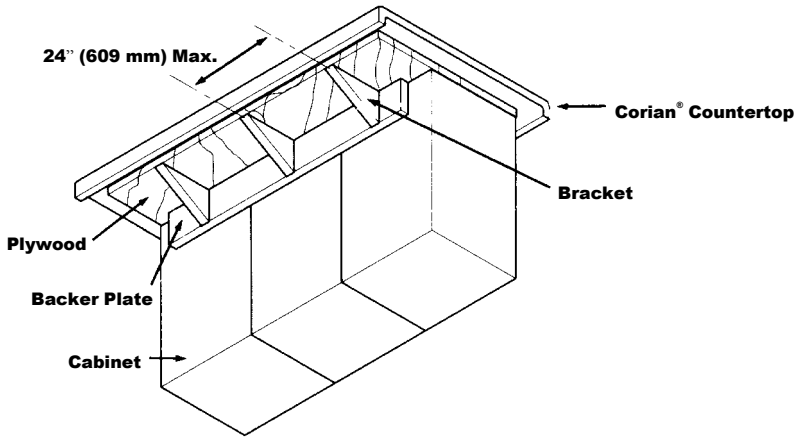
Helpful Hints:

All seamed overhangs must be supported by at least the plywood underlayment and the seams must be reinforced.

Any edge design is acceptable; however, a built-up edge makes the overhang stronger.

Leave at least 1/8" (3 mm) between the plywood and the built-up edge.

Figure 9.3.3.C



Install the Supports:

Plywood Underlayment:

- Fasten the plywood support to the cabinet with wood screws, making sure the "A" side faces the floor. Install the screws every 4" (102 mm) to 6" (152 mm). ***Do not*** use nails.

Brackets:

- Fasten the brackets to the back of the cabinet with screws, or
- Fasten the backer plates to the cabinet frame with wood screws. Install the screws 1" (25 mm) from the top, 1" (25 mm) from the bottom and in the center of each backer plate.
- Use a backer plate to support brackets if cabinets are not sufficient to support the weight of the countertop.

Plywood Underlayment and Brackets:

- Follow the above procedures; however, fasten the brackets and backer plates to the cabinet before attaching the plywood.

Glue the countertop to the underlayment:

Plywood Underlayment:

- Use one dab of silicone adhesive every 12" (305 mm) to 18" (457 mm) to secure the Corian® countertop to the plywood.
- Stain/urethane, paint or cover the plywood with Corian® or laminate, if desired.

Brackets of Corian®:

- Follow the procedure for gluing plywood underlayment.
- Use one dab of silicone adhesive 1" (25 mm) from the tip of each bracket. Apply dabs of silicone every 12" (305 mm) to 18" (457 mm) to the upper edges of the cabinets.

9.4 COVERING LAMINATE WITH CORIAN®

Certain commercial installations allow for Corian® to be installed over existing laminate surfaces.

Installing Corian® over laminate surfaces is not permitted in residential applications.

This procedure is to be used only when no hot, cold or moist conditions are present. "Hot" means over 120°F and "cold" means under 50°F. Typical applications include, but are not limited to, serving counters, condiment stands, dining tables, reception counters, ATM counters, etc.

1. Checking the Support

There should be no more than $^1/_8$" (3 mm) deflection when a 300# load is placed on the existing counter. Add legs or other support as required to prevent excessive deflection.

2. Preparing the Laminate Surface

Clean the surface with soap and water or a commercial cleaner to remove dirt and grease. Check that the laminate is flat within $^1/_8$" (3 mm) and well adhered to the substrate. Nail or screw any bubbled, warped or loose areas. Sand any bumps exceeding $^1/_{16}$" (1.5 mm) to provide a flat surface for the Corian®.

3. Fabricating the Corian® Cover

Follow typical procedures outlined in the Corian® Fabrication Manual and all provisions of Technical Bulletin CTDC - 117. The cover can be a single thickness or can have a thick edge buildup on one or more edges to conceal the existing laminate surface. Provide at least $^1/_8$" (3 mm) of clearance between the thick edge and the existing laminate edge to prevent edge failure if the laminate top expands. The Corian® top can have seams. For this application, no reinforcements are needed for either shop or field seams. Also, the laminate top is considered to provide "seam support" for all shop and field seams. Allow $^1/_8$" (3 mm) expansion room for each end of the cover that will butt into a wall.

4. Installing the Corian® Cover

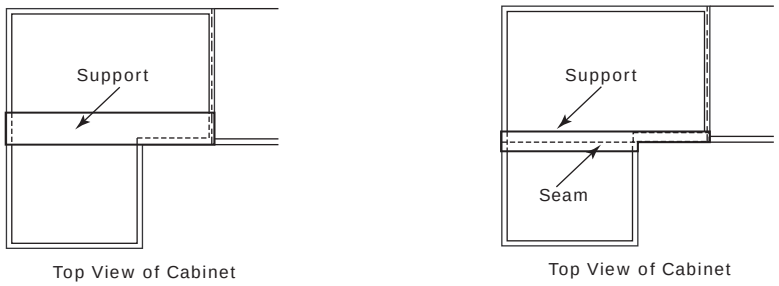
Install the Corian® cover in one or more sections. Leave 1/8" (3 mm) expansion room between the cover and each wall. Field seams can be made where desired. Use dabs of silicone sealant every 12" to 18" (305 mm to 457 mm) apart to adhere the Corian® top. Finish as desired. Be sure that all exposed edges have been eased to avoid customer injury.

9.5 SUPPORTING INSIDE CORNERS OVER CAROUSEL CABINETS

Most carousel style cabinets provide inadequate support for inside corners in Corian® countertops and, therefore, need to be properly supported. This section provides several methods of supporting these corners.

One support method uses 1" x 6" (25 mm x 152 mm) wood (or 3/4" [19 mm] plywood or M.D.F. board, but not particleboard or flake board) strip resting on one edge of the cabinet and running to the back edge of the cabinet (or a support strip attached to the back wall).

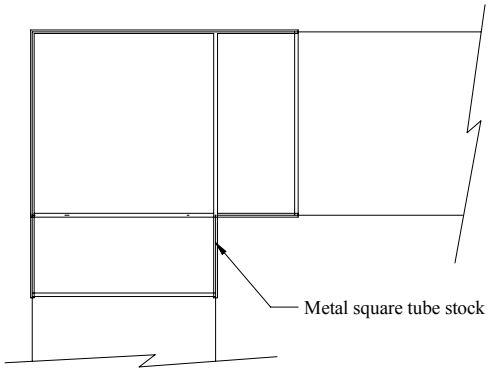
Figure 9.5.A



If a seam is made through or near the inside corner, the support must also include the seam reinforcement. Use a strip of Corian® and attach with Joint Adhesive.

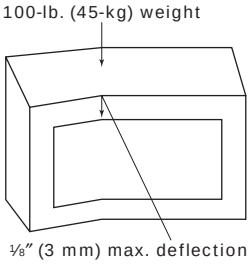
The strip should be as thick as the countertop, should form part of the front edge as shown, and should be supported by the back edge of the cabinet (or a wood strip attached to the back wall).

Figure 9.5.B



There may be other support methods that can provide adequate support. Metal tubing and bars can be used when space is limited. See Fig 9.5.B To test a design, apply a 100-pound (45-kg) weight to the inside corner. The maximum deflection allowed is 1/8" (3 mm).

Figure 9.5.C



9.6 SPAN DESIGN

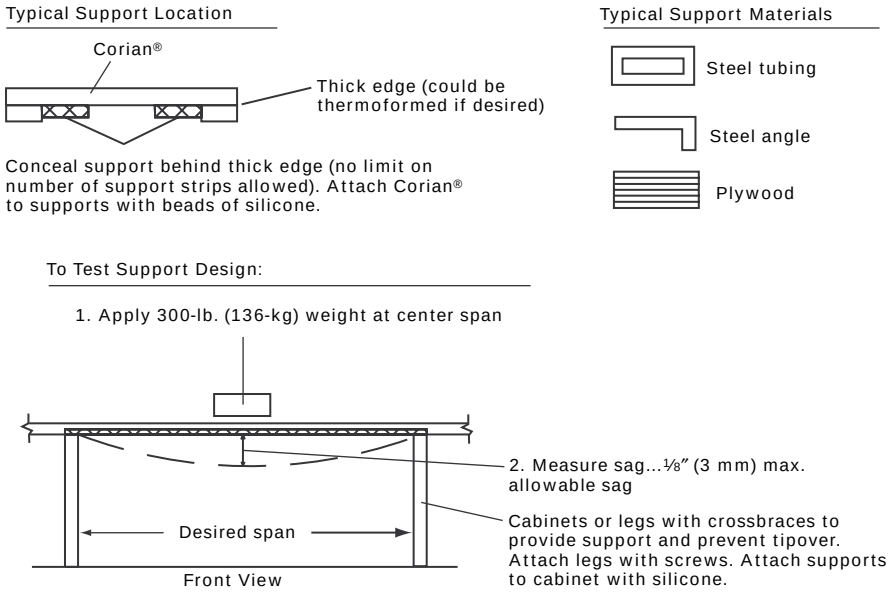
Corian® tops having a span must have proper support. The span must be able to hold a 300-lb. (136-kg) weight in the center of the span without deflecting more than 1/8" (3 mm).

Support materials may include but are not limited to:

- steel tubing
- steel angle iron
- plywood
- solid wood

See Figure 9.6.A.

Figure 9.6.A

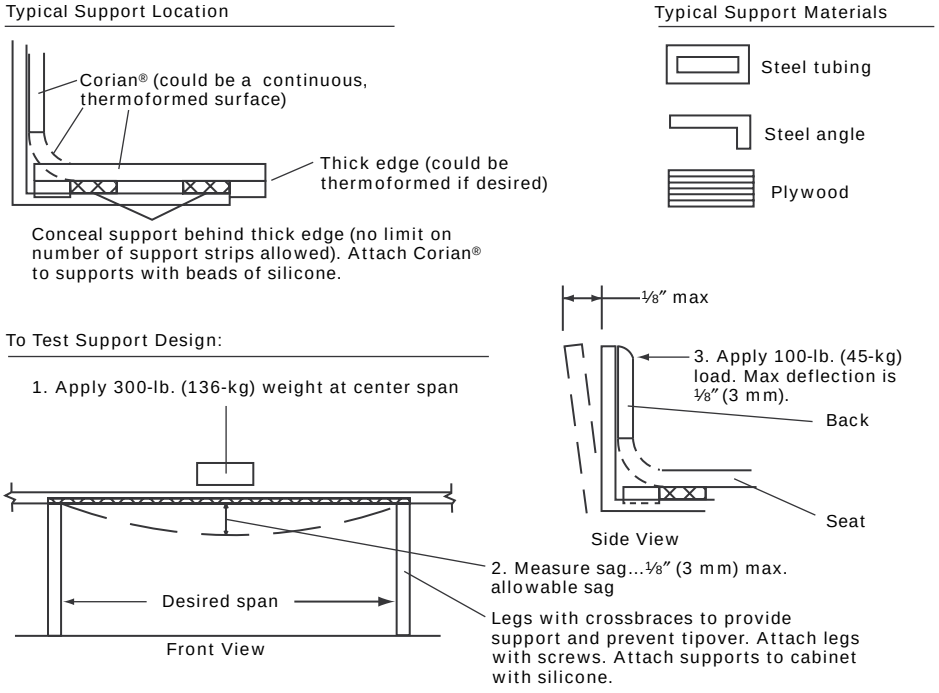

Typical Support Location
Corian®
Thick edge (could be thermoformed if desired)
Conceal support behind thick edge (no limit on number of support strips allowed). Attach Corian® to supports with beads of silicone.
Typical Support Materials
Steel tubing
Steel angle
Plywood
To Test Support Design:
1. Apply 300-lb. (136-kg) weight at center span
2. Measure sag...⅛" (3 mm) max. allowable sag
Desired span
Cabinets or legs with crossbraces to provide support and prevent tipover. Attach legs with screws. Attach supports to cabinet with silicone.
Front View

9.7
SEAT DESIGN

Seat Design

Seat designs parallel spans in that seats must also support a 300-lb. (136-kg) weight in the center without deflecting more than 1/8" (3 mm). In addition, the back rest of the seat must be able to withstand 100 lbs. (45-kg) of force without deflecting more than 1/8" (3 mm). The list of support materials is the same as for spans. See Figure 9.7.A.

Figure 9.7.A


Typical Support Location
Corian® (could be a continuous, thermoformed surface)
Thick edge (could be thermoformed if desired)
Conceal support behind thick edge (no limit on number of support strips allowed). Attach Corian® to supports with beads of silicone.
Typical Support Materials
Steel tubing
Steel angle
Plywood
To Test Support Design:
1. Apply 300-lb. (136-kg) weight at center span
Desired span
Front View
2. Measure sag...⅛" (3 mm) max. allowable sag
Legs with crossbraces to provide support and prevent tipover. Attach legs with screws. Attach supports to cabinet with silicone.
⅛" max
3. Apply 100-lb. (45-kg) load. Max deflection is ⅛" (3 mm).
Back
Seat
Side View

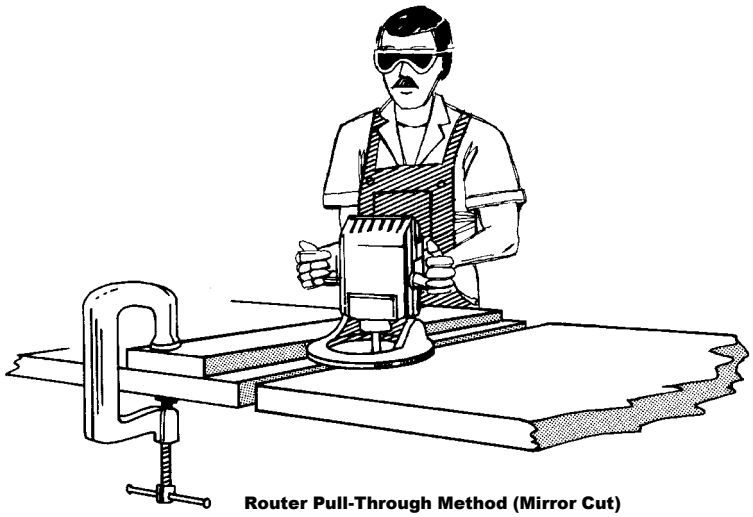
10.1 EDGE PREPARATION

When seaming two pieces of Corian® in a standard countertop seam, it is important that the two pieces are a perfect fit.

The ideal preparation for two edges to be seamed is the router pull-through method (mirror cut).

This method entails using a standard double-fluted router bit that is passed simultaneously across the leading edges of both pieces of the Corian® to be seamed, as illustrated in Figure 10.1.A.

Figure 10.1.A



Router Pull-Through Method (Mirror Cut)

Tools Required:

- 3-hp router
- double-fluted 1/2" (13 mm) shank router bit
- C-clamps, 6" (152 mm) bar clamps
- straightedge or mirror template

STEPS TO COMPLETION:

1. Place the two pieces to be seamed on a level workbench supported in a manner similar to that used when completing a cutout, to ensure that the router bit has a clean run.
2. Clamp the two pieces so that they are 3/8" (10 mm) apart and firmly and squarely affixed with clamps. It is imperative that the surfaecs be parallel and in the same plane.
3. Attach the straightedge to one side to guide the router between the two sheets. As the blade of the router is 1/2" (13 mm), 1/16" (1.5 mm) will be removed from each edge and a perfect match will be created between the two pieces.

Note: Be sure that the router handles clear the clamps before starting.

4. Clean both edges of any contamination that may discolor the seam. Use clear, denatured alcohol on a clean, white cloth or paper towel.

5. Trial-fit both edges to check for perfect fit.

Helpful Hints:

Do not touch the edges once they are clean and ready for seaming.

Edge preparation for all seams (including on-site seams) should be done under factory conditions wherever possible.

Time spent on seam preparation will be greatly rewarded by an inconspicuous look.

Be sure that pieces are color matched before starting seam preparation.

10.2 DECK SEAMS

A deck seam is used to describe any seam where Corian® is seamed edge-to-edge to make a horizontal surface.

Note:

SEAMS IN CORIAN® ARE WEAKER THAN THE SHEET. THEREFORE ALL DECK SEAMS MUST BE REINFORCED.

ALWAYS FOLLOW MANUFACTURE'S SAFETY DIRECTIONS WHEN HANDLING AND USING DENATURED ALCOHOL

STEPS TO COMPLETION:

1. Complete edge preparation as per "Steps to Completion," Section 10.1.

2. Transport pieces to be seamed to the workbench and lay out on a level bench.

3. Place a strip of plastic tape under the seam to stop surplus adhesive from spilling onto workbench.

4. Wipe both edges with a clean, white cloth soaked in clear, denatured alcohol.

5. Adjust the sheets from underneath until face alignment is perfect.

6. When the pieces to be seamed are perfectly clean, have good face alignment and good edge fit, mix the Joint Adhesive as per the instructions on the pack.

7. Set the two pieces to be seamed about $^1/_8$" (3 mm) apart.

8. Dam the ends of the two sheets using plastic release tape to prevent any glue from seeping from the ends of the seam.

9. Insert the adhesive holding the tube upright, pull the tube toward you and squeeze the Joint Adhesive into the gap between the sheets. FIll the gap 1/3 to 1/2 full.
10. Push pieces together firmly by hand until uniform squeeze-out is seen along the entire seam.
11. Secure seam using a vacuum clamp system or glue small blocks of plywood to each piece with hot-melt glue, and clamp onto these with C-clamps or 6" (152 mm) bar clamps to provide seam pressure.
12. Ensure that a perfectly even bead of glue is emitted from the full length of the seam when pressure is applied.
13. When the glue is completely set and hard, remove surplus with a router on "skis." Where "dustless" conditions are needed, use a block plane set on a low angle. At the back of the countertop you can use a broad, sharp chisel if access is impossible. Also, a random orbital sander equipped with a vacuum may be used.

Note: NEVER REMOVE EXCESS ADHESIVE WITH A BELT SANDER AS THIS WILL OVERHEAT THE SEAM CAUSING POSSIBLE WEAKNESS, DISCOLORATION OR FAILURE.

Helpful Hints:

Ensure that the sharp corners have been rounded on the chisel and plane blades to avoid scratching or gouging the surface when removing surplus adhesive.

Use the suggested Joint Adhesive color to attempt color match. Feel free to use a different color if so desired.

Never attempt any seam that is not a proper fit and is not thoroughly cleaned and color-matched.

Do not apply too much pressure to the seam as this may squeeze all the adhesive out, thus weakening the seam.

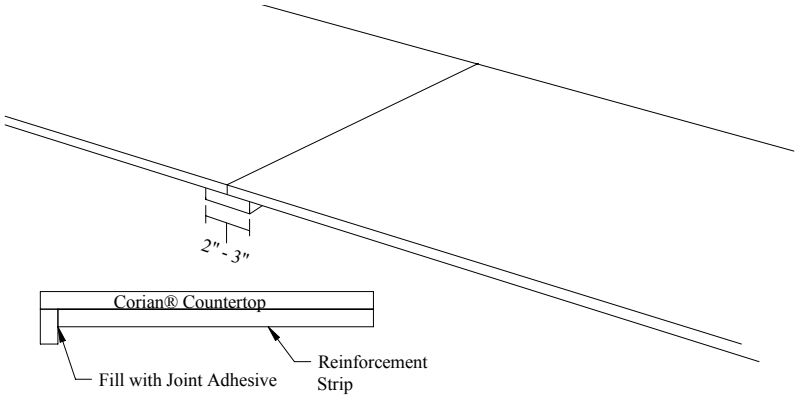
There are several commercially available devices to aid in edge alignment . Some will even aid in pulling and holding the pieces together while the adhesive cures.

10.3 REINFORCED SEAMS

All deck seams in Corian® must be reinforced. The entire process may be done with the sheets upside down. thus the edges, the seam reinforcement, cooktop reinforcement blocks and Corian® bowls may be glued at the same time.

To reinforce a seam, a 2" - 3" (51 - 76mm) "strip" of Corian® is cut and glued equally under the seam in the deck. The strip must go the full length of the seam, as illustrated in Figure 10.3.A. Be sure strip is chip free.

Figure 10.3.A



Section: Reinforcing Fits Between Edge Buildup Strip and Wall

Apply adhesive to the end of the reinforcement strip which butts into the front edge strips.

STEPS TO COMPLETION:

1. Remove excess adhesive and sand the underside of the sheet and the strip smooth.
2. Prepare the strips, making sure they are the same length as the seam (i.e., that they run the full length of the seam), and that they are between 2" and 3" (51 to 76mm) wide.

Note:
The strip must be fully covered with Corian® Joint Adhesive.

3. Sand the strips prior to attachment to eliminate nicks and tool marks that could act as stress-riser crack starters.
4. Apply a liberal amount of Joint Adhesive to both surfaces and apply the strip evenly placed over the seam. ***Make sure there are no void or dry areas*** (i.e., the glue must be spread evenly over the entire strip). Be sure end of strip touching buildup strip is coated with Joint Adhesive.

   In addition, smooth all excess adhesive evenly on the underside of the seam along the edges of the reinforcement strip leaving a small cove.
5. Lightly clamp the strip to prevent movement while the adhesive cures.
6. The reinforcing strip may stick out past the back of the deck during seaming, but must be trimmed flush after the adhesive is completely set.

Helpful Hints:

Tests show that a reinforced seam is as strong as the material with no seam.

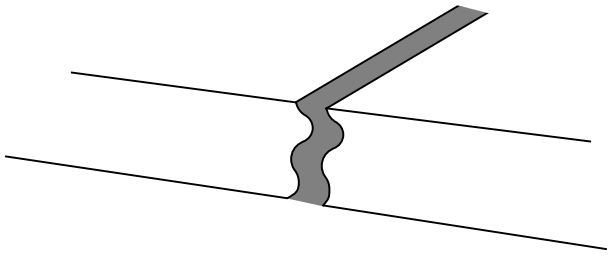
Do not reinforce a seam with material thinner than the countertop material (e.g., do not reinforce 1/2" [13 mm] with 1/4" [6 mm] Corian®). However, 1/2" (13 mm) deck may be "reinforced" using 3/4" (19 mm) Corian®.

It is not essential to use the same color material or adhesive for reinforcing strips, but do not use dark colors with light colors since the contrast may cause a shadow under the Corian®.

10.4 WAVY SEAMS

Another seam preparation technique is using the wavy cutter. This cutter increases the glue area and provides a stronger seam as well as leveling the top surfaces. Wavy seams may prove useful when seaming small pieces such as baseboards or chair rail. **Wavy seams still require reinforcement.**

Figure 10.4.A



STEPS TO COMPLETION:

1. Complete edge preparation as per "Steps to Completion," Section 10.1.
2. Transport pieces to be seamed to the workbench and lay out on a level bench.
3. Work from the face side of one of the sheets to be seamed and set the wavy cutter to a depth that will pass through the width of the sheet while setting the center of one of the "waves" at the surface of the sheet.

   Set a straightedge parallel to the seam, which will allow the wavy bit to cut the wavy pattern into the edge.
4. Take the opposite edge to be seamed and again work from the face side of the sheet but this time lowering the cutter to the correct depth (check with bit manufacturer). This enables the two top surfaces to align flush to each other on the face side.

5. Alternatively, the wavy cutter can be used to mirror cut the two sheets to be seamed. One sheet must be lower than the other at the correct height (check with bit manufacturer).

   Trial-fit a smaller piece of Corian® to determine correct fit prior to making your actual Corian® seam.

6. Wipe both edges with a clean, white cloth soaked in clear, denatured alcohol.

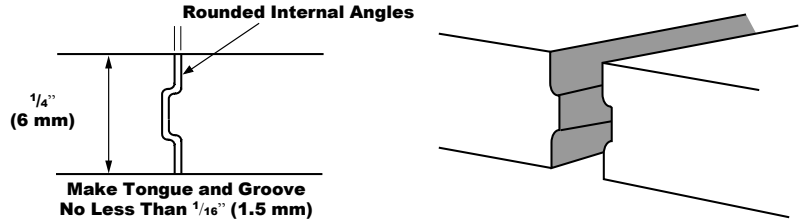
7. Make seam in normal manner.

10.5 TONGUE-AND-GROOVE SEAMS

The Tongue-and-Groove Seam is another modification to the Standard Seam by using a tongue and groove to enhance the face fit of the adjoining sheets. This can be used for 1/4" (6 mm) Corian® very successfully.

The method can be used to save time on face sanding because the face is well leveled.

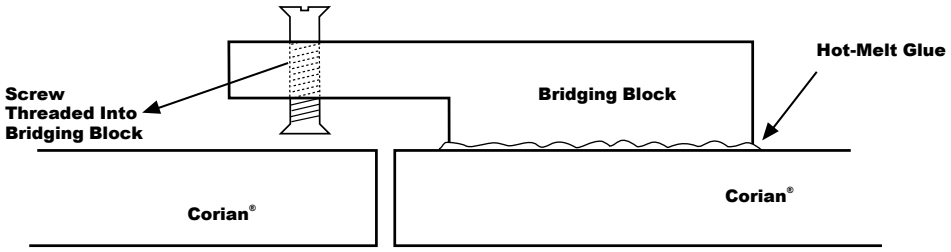
Figure 10.5.A



Bits can be custom-made, or several types are commercially available.

A simple way to take out warp at the seam and level the top surfaces to be seamed is to use the Bridge Technique.

Figure 10.5.B



Glue a bridging block to the lower side of the countertop seam using hot-melt glue. Carefully turn the screw in the bridging block until both surfaces are level. Bring together and glue as normal. After completion, remove the block.

Note: Protect countertop by using a wood or laminate shim under the screw.

10.6 V - GROOVE SEAMS

Requirements for seams made in V-groove tops are different than those for regular tops. Table 10.6.A outlines the requirements for seams in V-groove tops.

Table 10.6.A

PROCEDURE	REQUIREMENT
Turndown on edge of seam	1 1/2" minimum
Turndown edge in seam area	1/2" x 1/2" strip glued in behind front edge
Inside corner radius	Insert block—**1" minimum**
Butt seam at inside corner	Does **not** require reinforcement
Miter seam at inside corner	**Must** be reinforced
Deck seam	Completely filled with Joint Adhesive

STEPS TO COMPLETION:

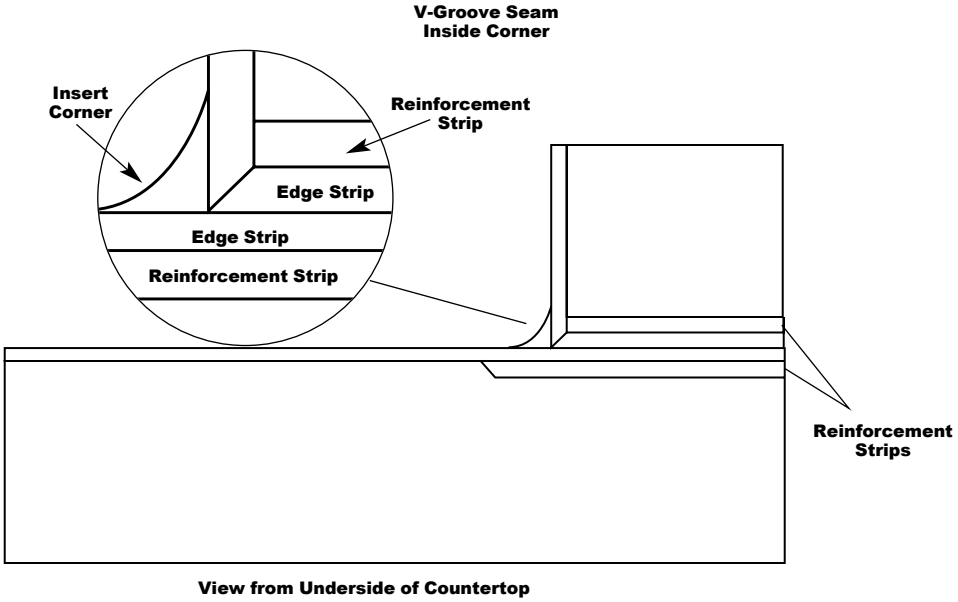
All edges on the countertop sections to be seamed are to be turned down a minimum of 1 1/2".

A reinforcing strip 1/2" x 1/2" x length of deck seam must be glued in the inside corner between the deck and the front edge strip. This can be done as the edge is being assembled. This is only done in the area of the deck seam. The 1/2" x 1/2" strips must be flush with the back of the deck. Glue end of one strip to the back of the front edge. Run other piece 1" past the insert block. Taper the end to 45°. See Figure 10.6.A.

An alternative to using a 1/2" x 1/2" strip is to make the strips 1/2" x the full height of the turned down edge piece. This will ensure adequate material will be left if the seam edges must be trimmed

V-GROOVE SEAMS

Figure 10.6.A



Seam Preparation

The edges of the seam are to be smoothed using typical methods such as the "Mirror Match" technique. Since the two deck pieces are joined without an offset seam, the insert method must be used to make the inside corner radius. See Section 12.3.

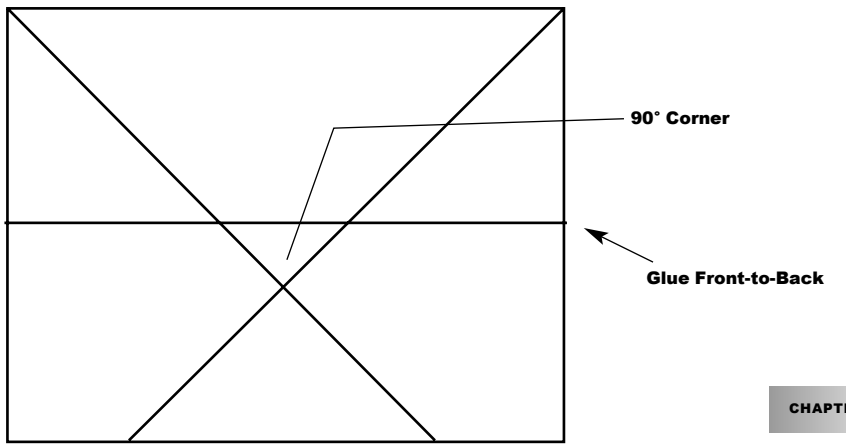
An alternative method is to partially remove some of the front edge and inlay the corner block into the edge. There are several manufacturers who make special jigs for this purpose.

If the countertop is made from any of the Lustra Series or Palladio colors, then the insert corner should be made using the following method:

- Glue two 1/2" x 1 1/2"strips together using Joint Adhesive for DuPont Corian®. Be sure to adhere the piece front-to-back.
- Cut the piece to make a right triangle. **Do not cut** the finished face. See Figure 10.6.B.
- Sand saw cuts to remove all saw marks. Cut to proper length.

Face of Upper Strip

Figure 10.6.B



A seam made with edges turned down by the V-groove method does not require seam reinforcement. However, if the inside corner is mitered, then reinforcement is mandatory.

10.7 ADHESIVES FOR USE WITH CORIAN®

Although many different types of adhesives are used worldwide, each application requires specific performance characteristics from the adhesive (color, flexibility, cure time, etc.). Listed below are the proper adhesives to use in a variety of applications. Questions regarding a specific brand of adhesive should be directed to the manufacturer.

Table 10.8.A

FOR JOINING CORIAN® TO	USE
Corian® for flush edges	Joint Adhesive for Corian®.
Corian® for recessed edges	Silicone sealant for Corian®.
Acrylic* strips for edges, inlays	Joint Adhesive for Corian®, Weld-on #16 or silicone sealant for Corian®.
Acrylic*, polyester or other polymeric (plastic) solid surface materials*.	Silicone sealant for Corian®**.
Steel, porcelain, china, cast iron or acrylic* bowls	Silicone sealant for Corian®.
Wood	Silicone sealant.
Laminate, wood veneer or metal tapes for edges or inlays	Silicone sealant for Corian®, or double-sided adhesive tape.
Marble, granite, or engineered stone	Silicone sealant
Zodiaq® Quartz Surfaces ***	Joint adhesive

* Acrylic materials other than Corian®.

** ***Do not rigidly adhere Corian® to any other solid surface product.*** Since the mechanical and chemical properties of other solid surface products do not match those of Corian®, use only flexible adhesives to join these products.

*** When SUB mounting Corian® shapes to Zodiaq® Quartz Surfaces.

10.8 MITER SEAMS

Several of the colors of Corian® have patterns that run throughout the sheet. A typical butt seam does nothing to change of direction of the pattern. In these cases, a miter seam may give the best aesthetics by allowing the patterns to "flow" through the corner. A miter seam does not give the best yield of the material as there are two triangular pieces left from making the miters. pieces can be used to make reinforcement blocks, or short edge strips.

When using a miter seam, all requirements for a deck seam, as set forth in the Fabrication Manual must be followed.

When making a miter seam, use the insert block method to get the proper inside corner radius. This combined with two blocks, which are attached to the underside of the deck in the corner, makes for a very strong seam. However, this requires that the reinforcement strip fits against the backside of the first block. (See Fig. 1) There are several ways to accomplish this. Among them are:

· Cut a square notch in the reinforcement strip
· Rout the notch in the reinforcement strip and round the back corner of the block
· Square off the back corner of the block to make a butt seam

Note:

Be sure the joint between the reinforcement strip and the corner block is completely filled with adhesive.

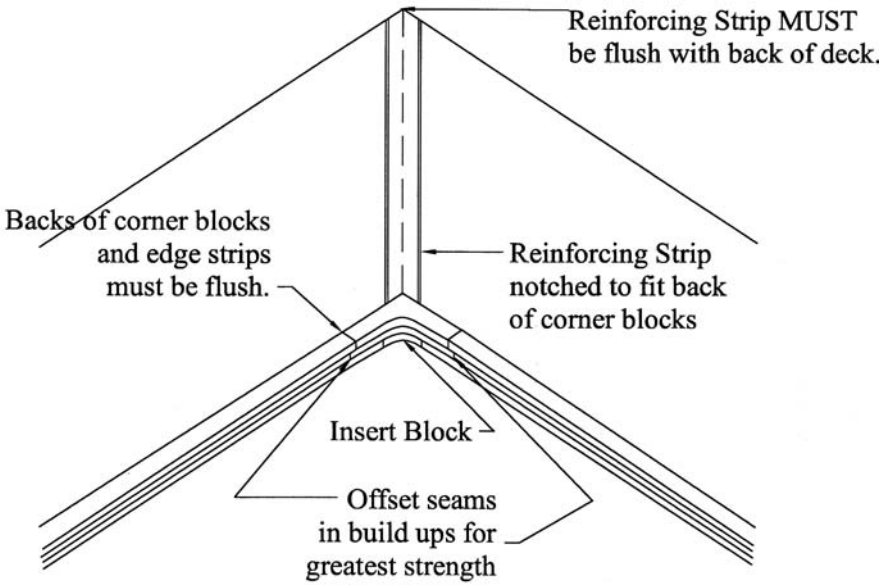


Figure 10.8.A

VIEW OF INSIDE CORNER FROM THE UNDERSIDE OF THE COUNTERTOP

Offsetting the seams in the corner blocks will help strengthen the corner.
When using a drop edge, a different method is used for the inside corner to assure a strong corner.

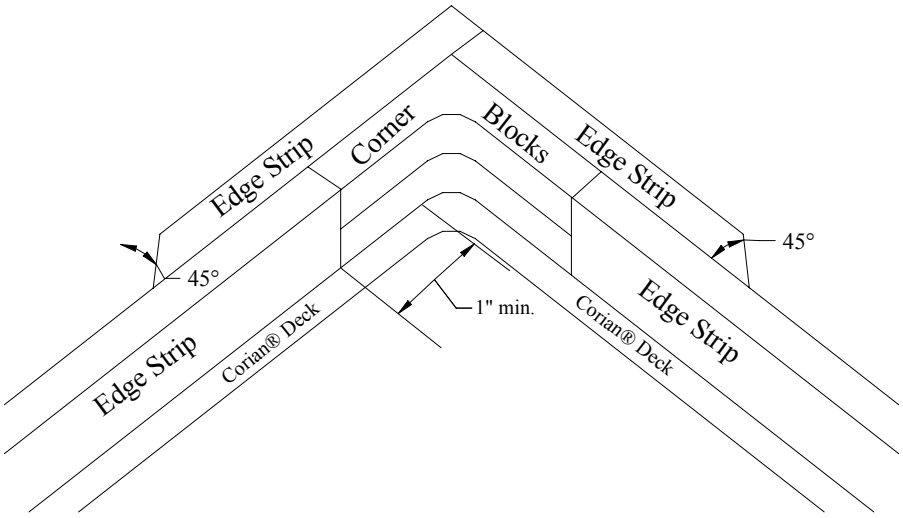


Figure 10.8.B

The strips extending from the corner blocks should be at least 3" long and must be fully adhered using joint adhesive.

10.9 SEAMING FROM A PANEL SAW

Testing has shown that sufficient quality of cut for seaming purposes can be acheived when using a panel saw. Specifically, the strength of a seam made from sheets cut on high quality panel saws using high quality blades is comparable to a mirror cut seam. The aesthetics of saw cut seams will vary with:

- Rigidity of the saw
- Saw set up
- Blade life
- Cut speed
- Skill of the operator.

To obtain the highest quality of cut:

- Have a saw of sufficient mass and rigidity.
- Use Corian® to set up saw
- Use the saw blade manufacturer's recommended blade speed and cut rate.
- Make a smooth transition when entering and exiting material.

Panel saw set up is even more critical when cutting Corian® than when cutting wood, so always use Corian® during the set up process.

11.1
INLAY MATERIALS

Inlaying material into Corian® can greatly add value to the finished product and make your work stand out from other products.

There are only a few basic rules pertaining to Corian® when it comes to inlays:

1. The product must be compatible with Corian®.

2. All internal corners must be rounded.

3. The product must be food-safe when used in kitchen decks.

4. Inlays do not fall within the Corian® warranties.

Compatible products include:

•Corian®
•Zodiaq®
• brass
• acrylic sheet
• wood
• wood veneers
• tiles
• laminate
• glass
• acrylic adhesive
• Corian® adhesive
• epoxy inlays

Noncompatible products include:

• ferrous metals
• full-wood sandwiches

Helpful Hints:

Do not install material into Corian® that will expand and contract excessively when heated or chilled (e.g., ferrous metals).

Do not pour liquid fillers over large areas that might shrink and expose blowholes.

Do not allow air bubbles to form in liquid inlays.

It is suggested that joint adhesive inlays be limited to “line or stripe” details. The width of the groove should be no more than double the depth of the groove.

The bit used to rout out groove should have rounded corners.

The inlay must be sound and free of gaps and nicks that may collect dirt or start a stress riser.

11.2

INLAYS OF CORIAN®

11.2.1

1 PIECE INLAYS OF CORIAN®

Inlaying a piece of Corian® sheet material into the surface of another sheet.

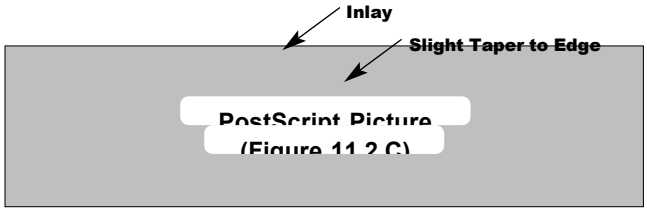
1. Construct the Corian® inlay piece as per standard fabrication techniques, ensuring the inlay is thicker than the depth of the trench. 1/4" (6 mm) Corian® can be used to create the inlay piece.

   The edges of the inlay piece must be tapered with a bevel to assist a good fit.

2. If the Corian® piece is a strip, use a straightedge. If it is of a more complex design, create a template for use when routing the trench. A C.N.C. router is also a good alternative if available.

3. Using the router with a straightedge or template, create a groove in the Corian® surface that is 1/16" (1.5 mm) less deep than the thickness of the piece to be inlayed, as illustrated in Figure 11.2.1.A.

Figure 11.2.1.A



5. Thoroughly clean the groove with clear, denatured alcohol.

6. Trial-fit the inlay and check for precise fit, then trim where required until fit is perfect.

7. Using Corian® Joint Adhesive as per specified for the countertop color, apply an even coat of adhesive over the entire groove area.

   Apply a similar coat of Corian® Joint Adhesive to the inlay piece, paying particular attention to the tapered edges.

8. Place the inlay into the groove and apply even pressure across the entire inlay piece using clamps and wooden blocks.

9. When the Corian® Joint Adhesive has set, remove excess material and glue with a router on "skis."

10. Sand, smooth and finish as per standard instructions.

Helpful Hints:

When completing liquid inlays in Venaro materials, colors tend to fade through the side of the groove. This gives an unusual blurred effect as though the color has run.

Do not cut the groove for liquid inlays square. Always use a bit with rounded corners.

It may be necessary to round the underside of the acrylic inlay to make a good fit.

Avoid nicks and chips, as these may cause stress risers.

If an inlay is deeper than half the thickness of the material, then the entire inlay must be reinforced using another piece of Corian® of the same thickness.

11.3 LIQUID INLAYS

There are several types of liquid inlays that will work with Corian®; however, there are several types that are incompatible, such as polyesters. Polyesters have different mechanical properties than Corian® and will eventually work loose. Corian® Joint Adhesive can be used, but great care must be used to avoid air bubbles in the inlay.

The best liquid to use is the Epoxy Inlay System from Align-Rite Tool Company. Contact your local Authorized Distributor of Corian® for more information.

11.4 SOLID INLAYS

Solid inlays are a great way to introduce color and style into an installation. Typical examples of solid inlays are:
- wood veneers
- tile
- plastic veneer tapes
- plastic laminate

Solid inlay can be installed by cutting a groove into the Corian® and using a flexible adhesive to adhere the inlay in place. See Table 10.7.A for the proper adhesives. Many types of inlay materials come in sheets or strips and have a peel-and-stick adhesive on the back for easy installation.

It is best to stain and finish real wood veneers before installing them into Corian®. This prevents getting the stain or finish on the Corian®. Although the Corian® is easy to clean, it would require great care to avoid harming the finish on the veneer during cleaning.

When using laminate as the inlay, be sure to get postformable grade, as this makes bending around inside and outside corners much easier.

11.5

ZODIAQ®

Zodiaq® quartz surface and Corian® solid surface should work very well together if the following precautions are taken:

· Be sure surfaces to be joined are clean.
· Use an adequate amount of adhesive for the job.
· Seal all gaps in the edges after application to prevent moisture penetration.
· ***Do Not*** rigidly adhere butt seams in the Zodiaq® strips in the inside corners of inlays. Use only silicone when making inside corners in inlays of Zodiaq®.

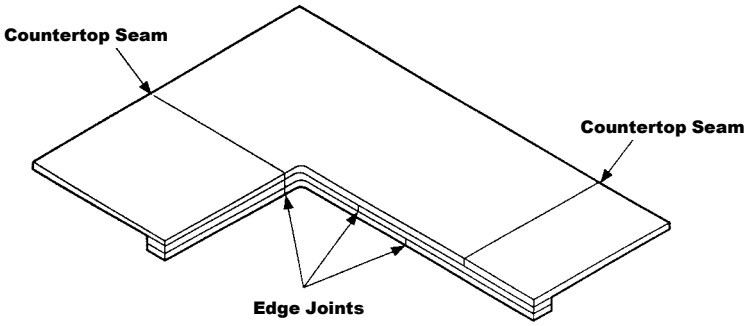
A slight recess of the Zodiaq® back from the edge of the Corian® will help prevent any interference during sanding.

12.1 PREVENTING CRACK STARTERS

Stress, which causes materials to crack, occurs when a material is subjected to a force. Stresses are made worse when "crack starters" are present in the material. Some crack starters, such as square inside corners, deep cuts, nicks and chips can be prevented by following proper fabrication and maintenance procedures.

Another crack starter, often overlooked during fabrication, is the incompletely filled seam or edge joint. Wherever Corian® is joined to itself or to other materials, the joint must be *completely* filled with the *proper* adhesive. Also, all *edge joints* must be filled with adhesives of similar flexibility to prevent concentrating stresses into joint areas. For example, when an edge buildup is attached to the countertop with joint adhesive, all *joints* in the edge buildup should be filled with joint adhesive. When it is attached with a flexible adhesive, then all *joints* in the edge buildup must be filled with flexible adhesive. Inlays should always be attached with the recommended adhesive. See Section 10.5 for adhesive recommendations.

Figure 12.1.A



12.2 RABBETING THE UNDERSIDE OF THE DECK

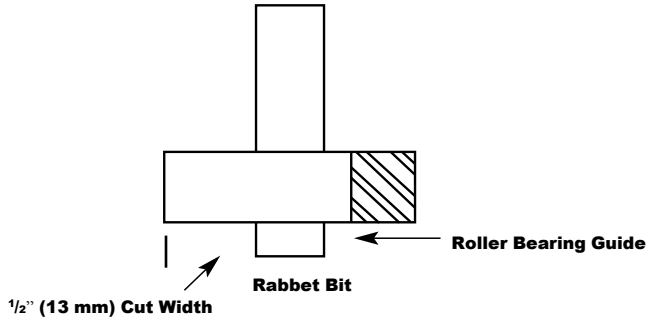
There are several methods of making edge buildup. Typically either a stack (layered) or a drop (a single upright strip) is used. Following are several ways to assist in making edge buildup.

When the underside of sheets of the particled color families is uneven or has some air bubbles that will affect the seam quality, rabbeting the underside of the deck is suggested to eliminate the aforementioned problems.

Tools Required:

- 2-hp router
- Rabbeting bit for drop edges or mortising bit for stack edges

Figure 12.2.A



STEPS TO COMPLETION:

1. Ensure that the countertop is finished to a stage where all countertop seams are complete and the countertop is accurately sized to 1/16" (1.5 mm) of its final dimension. This requires that all pocket cuts are complete, especially in inside and outside corners.
2. Fit the router with the proper bit.
3. Rout a 1/2" x 1/16" (13 mm x 1.5 mm) rabbet along all edges of the countertop that require a drop edge.
4. Turn the countertop over and ensure that the router cut is smooth.

Helpful Hints:

The notch bit allows the rabbet to be completed on all straights and curves without turning the countertop over.

Where possible, use a router with as large a base as possible, as this prevents any possible tilting during the cut.

12.3 CONSTRUCTING THE DROP EDGE BUILDUP

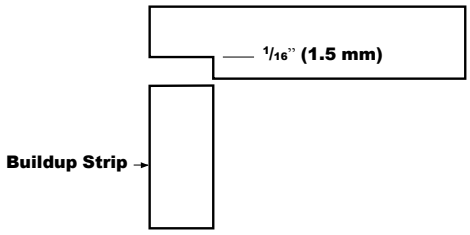
Drop edge buildups are as important as inside and outside corners in terms of your ability to create a seamless finish. Drop edges are a more simple process, but are equally important to finish perfectly.

Note: The minimum thickness for a drop edge strip is 7/16". Do Not over-rout during edge clean up.

STEPS TO COMPLETION:

1. Using material color-matched to the sheet, cut the required number of strips. It is essential that buildup seams do not align with countertop seams. Careful planning is required at this point to ensure that the separation between seams is a minimum of 2" (51 mm).

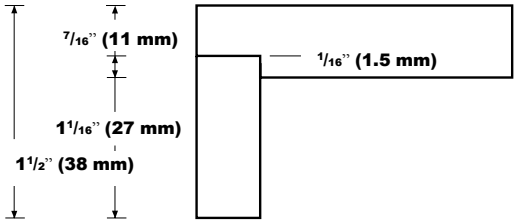
Figure 12.3.A



The width of the strips can be calculated as follows:

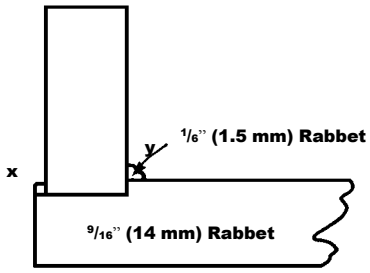
Total countertop thickness minus thickness of the sheet plus the depth of the rabbet = width of the strips, as illustrated in Figure 12.3.B.

Figure 12.3.B



2. Sand to a smooth finish the edge of the strips to be glued to the rabbeted edge.
3. Turn the sheet over and trial-fit all strips.
4. Apply a generous quantity of Corian® Joint Adhesive to the seam area, ensuring that the entire rabbeted area has an even coating.
5. Place the buildups in position hard against the rabbet upturn and clamp in position using spring clamps placed every 3" (76 mm).
6. Ensure that the pool of adhesive that forms at the rear edge of the seam is left intact and allowed to dry.
7. Ensure that the pool of adhesive that forms at the front edge of the seam is continuous and left intact.

Figure 12.3.C



Allow Corian® Joint Adhesive to pool at both points x and y in Figure 12.3.C. If pooling is not continuous at point x, reapply additional Corian® Joint Adhesive.

Helpful Hints:

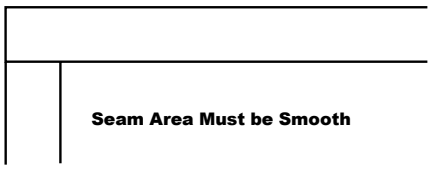
When clamping the buildup strips in place, be especially careful to ensure that they are perfectly aligned at 90 degrees to the countertop. The depth of the rabbet may be adjusted deeper to compensate for perceived particle separation in the edge of the deck.

The usual method to construct drop edge buildups is without using the rabbet method: **Non-Rabbeted Edge Detail.**

Drop edge strips butted directly against the underside of the Corian® sheet are possible.

When using this technique, be sure to check for defects to the underside of the sheet and sand the strip and the underside of the sheet prior to seaming, if needed.

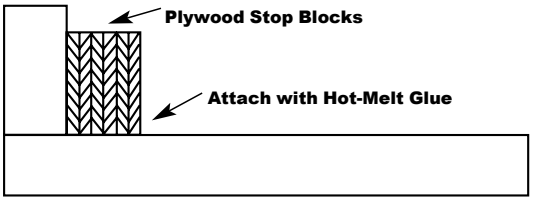
Figure 12.3.D



Helpful Hints:

Use wooden stop blocks glued in place with hot-melt glue to perfectly align buildup strips.

Figure 12.3.E



12.4 INSIDE CORNER CONSTRUCTION METHODS

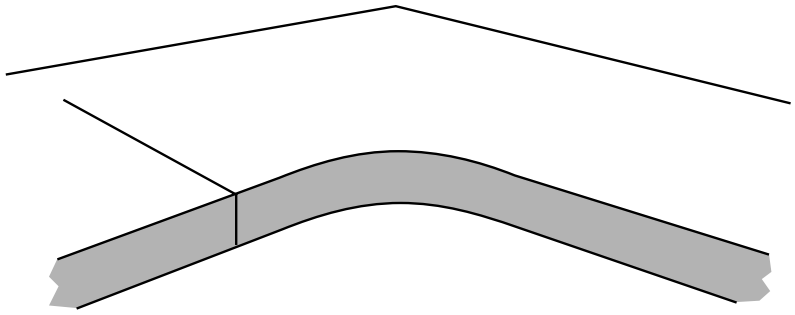
One of the major fundamentals in the fabrication of Corian® is that all inside corners have as large a radius as possible, with the minimum radius being 1/2" (13 mm).

There are several ways to fabricate the inside corner on a standard countertop.

1. Laminated Method

The countertop seam is placed out of the inside corner. The sheet that forms the "L" shape must be initially cut within 1/16" (1.5 mm) of the shape of the final inside corner radius.

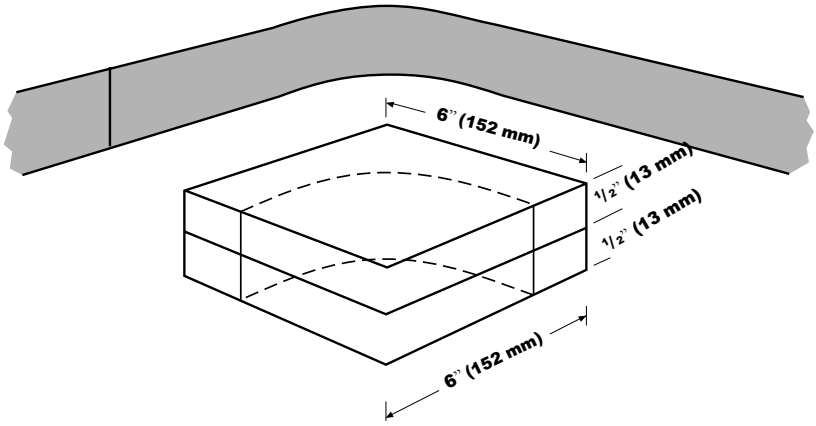
Figure 12.4.A



Thicknesses of 1/2" (13 mm) Corian® (subject to the required depth of the buildup strip) are sanded, glued and clamped together.

They form a square block that is then routed to the exact radius and shape of the internal corner.

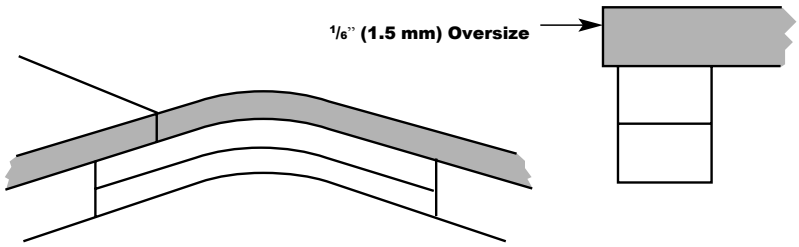
Figure 12.4.B



Laminated Corner Block

This block is then glued to the underside of the countertop in the inside corner, and forms a guide for a flush-cut trimmer to complete the final shape of the countertop.

Figure 12.4.C



Note:

Butt seam in buildup edge must be a minimum of 1" (25 mm) past the radius in the inside corner.

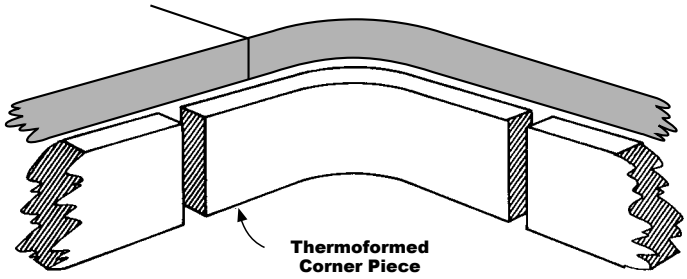
2. Thermoformed Method

The countertop seam is placed out of the inside corner. The sheet that forms the "L" shape must be cut initially within 1/8" (3 mm) of the shape of the final inside corner radius.

A strip of color-matched material is then thermoformed as per standard instructions to the required shape and depth of the thick edge.

Prepare the edge to be glued against the underside of the countertop to ensure it is perfectly square, as plastic deformation may occur during thermoforming.

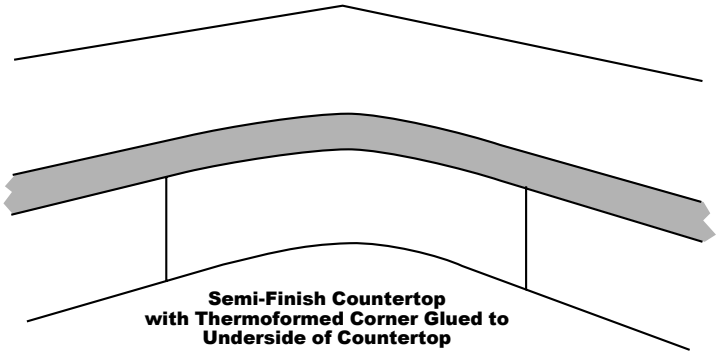
Figure 12.4.D



The piece is then glued to the underside of the countertop in the inside corner and forms a guide for a flush-cut trimmer to complete the final shape of the countertop.

Note: Thermoformed piece must be minimum 7/16" thick.

Figure 12.4.E



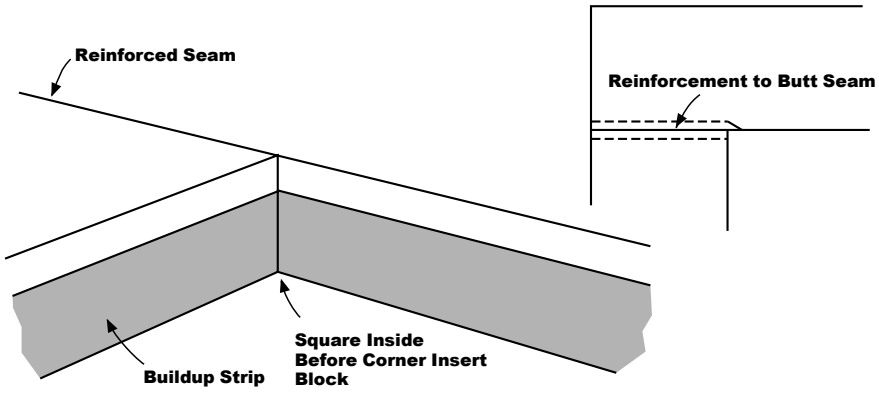
3. Corner Insert Method (Laminated)

A standard square corner with a butt seam is made.

A straightedge buildup is then completed around the entire front edge.

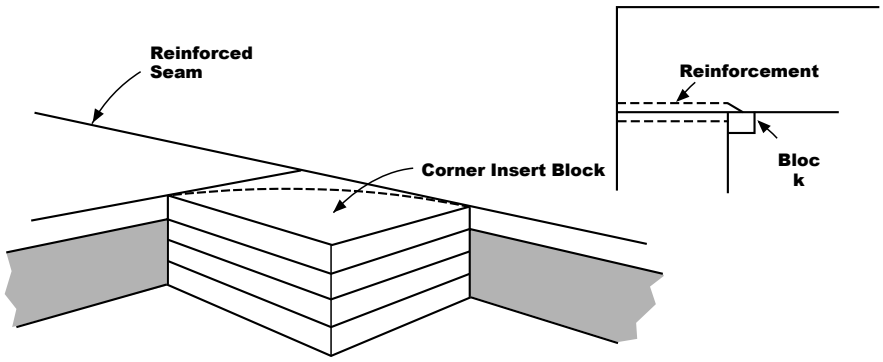
The seam is then reinforced with the strip fitting flush to the straightedge buildup.

Figure 12.4.F



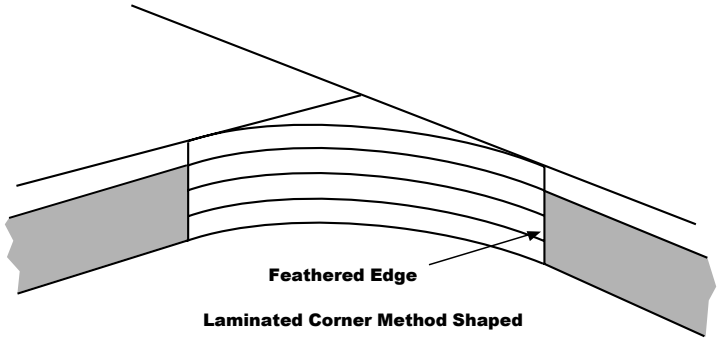
The corner insert piece is then added in the inside corner and glued to the front edge buildup.

Figure 12.4.G



The radius is then formed with a router and radius template.

Figure 12.4.H

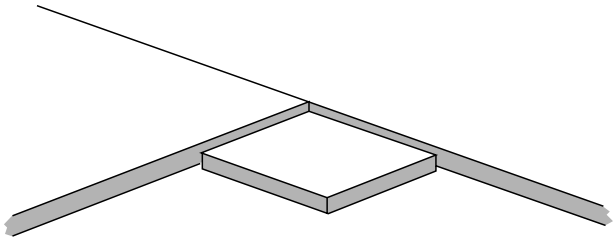


4. Corner Insert Method (Thermoformed)

A standard square corner with a butt seam is made.

The corner insert piece is then added to the inside corner and glued to the edge of the countertop.

Figure 12.4.I



Corner Insert Method (Thermoformed)

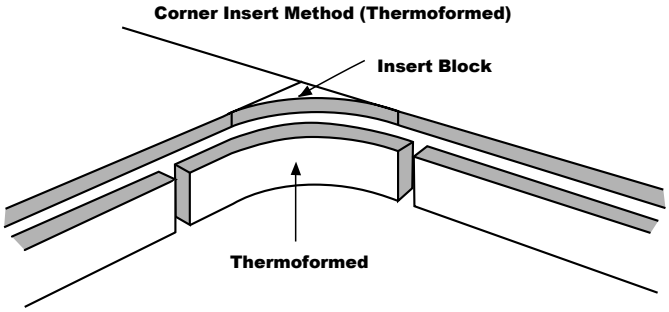
The required radius of the inside corner is then routed into the insert block, 1/8" (3 mm) oversize.

The rabbet for the buildup is then completed.

A strip of color-matched material is then thermoformed to the required shape and depth of the buildup.

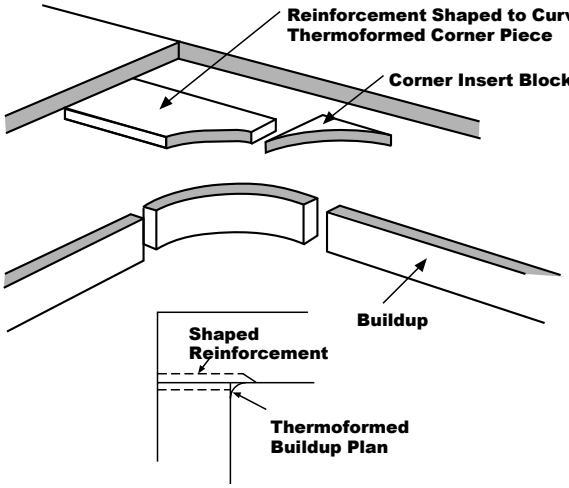
The countertop is then turned over and the thermoformed piece glued to the underside of the countertop to make the inside corner.

Figure 12.4.J



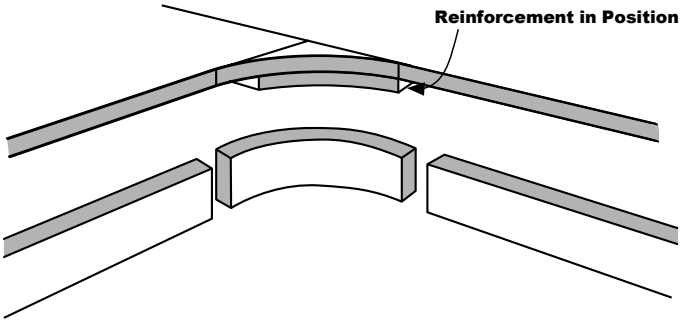
The reinforced seam is then completed flush and scribed to the inside corner piece.

Figure 12.4.K



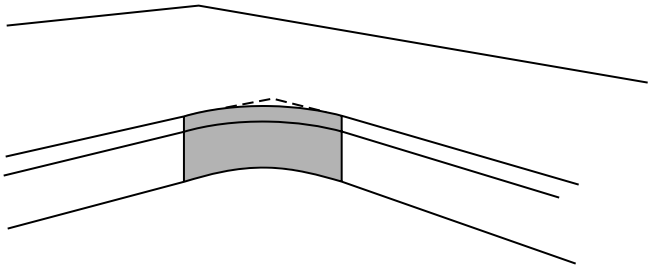
The edge buildup is then completed around the entire front edge of the countertop and butted up to thermoformed inside corners.

Figure 12.4.L



The countertop radius is then formed with a router and radius template.

Figure 12.4.M



Helpful Hints:

Never have the seams to the buildup closer than 1" (25 mm) from the radius in the corner.

The corner is the place of extreme stress from thermocycling. To strengthen the corner, the radius or round effect allows the stress risers to flow around the corner.

12.5 OUTSIDE CORNER CONSTRUCTION METHODS

Like an inside corner, an outside corner can be formed using two methods:

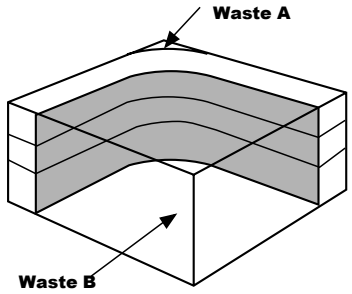
1. Laminated Method

The Laminated Method utilizes the same principles as the Laminated Method for inside corners.

Thicknesses of $^1/_2$" (13 mm) Corian® (subject to the required depth of the buildup) are sanded, glued and clamped together.

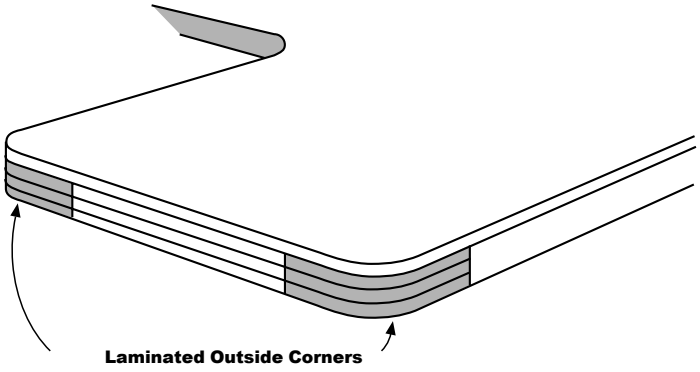
They form a square block that is then routed to the exact radius and shape of the external corner.

Figure 12.5.A



This block is then glued to the underside of the countertop at the outside corner and forms a guide for the flush-cut trimmer to complete the final shape of the countertop.

Figure 12.5.B

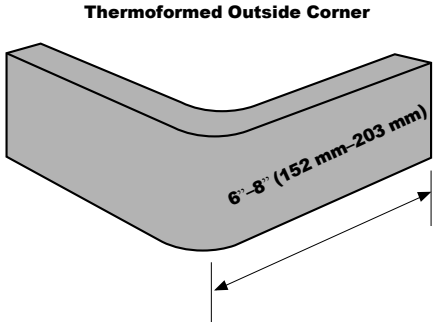


2. Thermoformed Method

A strip of color-matched material the required depth of the buildup is thermoformed as per standard instructions to the required shape and depth of the buildup.

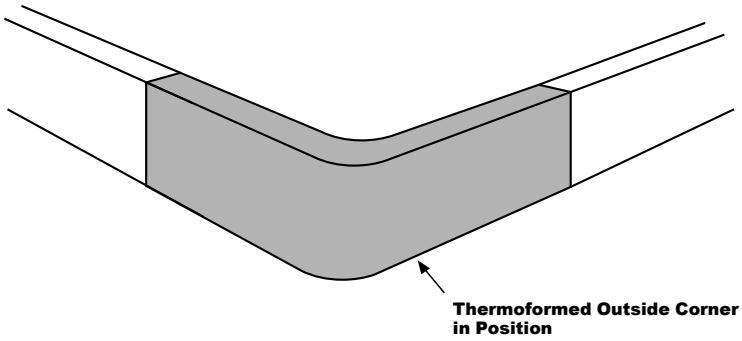
Note: Thermoformed piece must be mimunum 7/16" thick.

Figure 12.5.C



This piece is then glued to the underside of the countertop at the outside corner and forms a guide for the flush-cut trimmer to complete the final shape of the countertop.

Figure 12.5.D



12.6 USING THE LAMINATED METHOD FOR INSIDE CORNERS

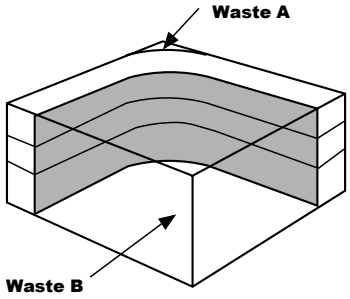
STEPS TO COMPLETION:

1. Complete the countertop to a stage where all countertop seams are complete. The complete countertop must be finished to a point where all buildup edges, including inside and outside corners, are finished to within $^1/_8$" (3 mm) of their final shape and size.
2. Complete a $^1/_{16}$"x $^1/_2$" (1.5 mm x 13 mm) rabbet around all edges that require buildup, as per instructions in Section 12.2.
3. Using color-matched material to the sheet, create blocks 8" x 8" (203 mm x 203 mm), sufficient to make up the required buildup depth.

   The number of blocks required in the Laminated Method can be calculated as follows:

   (Countertop thickness minus thickness of the sheet plus the depth of the rabbet) divided by $^1/_2$" (13 mm) = number of blocks, rounded out to the greatest whole number.

Figure 12.6.A



4. Sand the blocks to ensure a perfectly flush face fit for all blocks.
5. Apply a perfectly even layer (i.e., no "S" pattern or similar) of Corian® Joint Adhesive to the faces of all blocks to be seamed.

6. Clamp the layers together and allow to set.
7. Upon setting, sand two adjoining sides of the block to a smooth finish.
8. Mark block for template position.
9. Using hot-melt glue, adhere the partially completed block onto a secure work surface that allows room for a radius template and router.
10. Clamp template to laminate block in a position that ensures that the inside corner radius is at least 1/2" (13 mm).
11. Rout along the template to complete the piece.
12. Closely examine the now-formed corner piece for any visible seams. If seams are visible, repeat steps 1–8 (i.e., do not use this piece).
13. Double-check that the ends of the inside corner piece are well-finished and perfectly square.
14. Complete straightedge buildup as per instructions in Section 12.3.
15. Trial-fit all parts for size, alignment and color-match.
16. When sure that all parts are a good fit, apply a generous coating of Corian® Joint Adhesive and clamp all pieces in position.
17. After adhesive has set, turn the sheet over and, using flush-cut router bit, complete the countertop shape by removing the 1/16" (1.5 mm) overhang.
18. Complete edge treatments as per instructions in Section 12.12 or 12.13.

12.7 USING THE THERMOFORMED METHOD FOR INSIDE CORNERS

STEPS FOR COMPLETION:

1. Using a color-matched piece of material to the sheet surface, prepare a strip of Corian® the required depth of the buildup by a length that provides 4" (102 mm) returns from each end of the inside corner radius.

   Calculate the required depth of the build up by subtracting the thickness of the sheet from the required countertop thickness plus the depth of the rabbet.

   Calculate the required length of the thermoformed piece by using the following formula:

   The circumference of a circle = 2π ($\pi = 3.1416$)
   A right angle forms 90 degrees (i.e., 1/4 of a circle), therefore the formula is:

2šr divided by 4 plus 2 x 4" (100 mm) (for the legs of the piece).

So to calculate the required length of the thermoformed piece:

$$\frac{\textbf{2 x 3.1416 x radius of inside corner}}{\textbf{4}} \textbf{ + (2 x 4" [102 mm])}$$

Example: $\frac{2 \times 3.1416 \times 4" \text{ (102 mm)}}{4} + (2 \times 4" \text{ [102 mm]})$

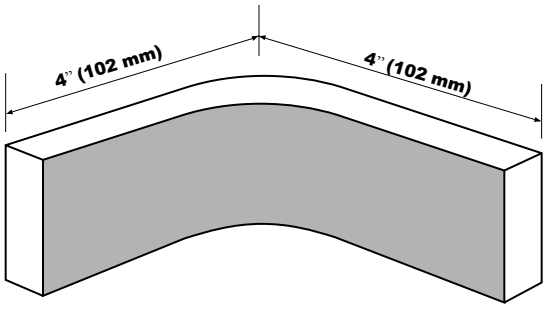
$= \frac{25\frac{1}{8}" \text{ (638 mm)}}{4} + 8" \text{ (203 mm)}$

$= 6\frac{1}{4}" \text{ (158 mm)} + 8" \text{ (203 mm)}$

$= 14\frac{1}{4}" \text{ (362 mm) length of piece}$

2. Using the techniques detailed in Section 16 on thermoforming, thermoform the strip to the required radius.

Figure 12.7.A



3. Prepare the edge to be glued against the underside of the countertop to ensure it is perfectly square, as plastic deformation may occur during thermoforming.

4. The piece is then glued to the underside of the countertop at the inside corner and forms a guide for the flush-cut trimmer to complete the final shape of the countertop.

12.8 USING THE CORNER INSERT METHOD (LAMINATED) FOR INSIDE CORNERS

STEPS FOR COMPLETION:

1. Using material color-matched to the sheet, create blocks sufficient to make up the required buildup depth. Size the blocks to offset build up seams a minumum of 1" past the end of inside corner radius.

   The number of blocks required in the Laminated Method can be calculated as follows:
   Countertop thickness divided by $\frac{1}{2}$" (13 mm) = number of blocks, rounded out to the greatest whole number.

Sand the blocks to ensure a perfectly flush face fit for all blocks.

3. Apply a perfectly even layer (i.e., no "S" pattern or similar), of Corian® Joint Adhesive to the faces of all blocks to be seamed.
4. Clamp the layers together and allow to set.
5. Upon setting, sand two return sides of the block to a smooth finish and scribe a perfect match to the buildup edge in the right angle inside corner of the sheet.
6. With the sheet placed upside-down on a level workbench, place a sheet of plastic underneath the edges of the inside corner.
7. Apply a generous quantity of Corian® Joint Adhesive to the face of the insert block and the edge of the sheet.
8. Adhere the block into the right angle inside corner and clamp in position, ensuring that the face side of the block is approximately 11⁄432• (.8 mm) above the countertop level and allow to set.
9. Turn the sheet over and clamp a radius template in position.
10. Use a router following the template and rout the inside corner radius.

12.9 USING THE CORNER INSERT METHOD (THERMOFORMED) FOR INSIDE CORNERS

STEPS FOR COMPLETION:

1. Using material color-matched to the sheet, create a block 2" x 2" (51 mm x 51 mm).
2. Sand two return sides of the block to a smooth finish and scribe a perfect match to the face edge in the inside corner of the sheet.
3. With the sheet placed upside-down on a level workbench, place a sheet of plastic underneath the edges of the inside corner.
4. Apply a generous quantity of Corian® Joint Adhesive to the edges of the insert block and the edges of the sheet.
5. Adhere the block into the inside corner and clamp in position, ensuring that the face side of the block is flush with the countertop level and allow to set.
6. Clamp a template to the corner and, using a router, complete the inside corner radius, 1/16" (1.5 mm) oversize.
7. Follow the instructions in Section 12.2 and complete a 1/16" x 1/2" (1.5 mm x 13 mm) rabbet around the edges of the countertop that require buildups.
8. Using a piece of material color-matched to the sheet surface, prepare a strip of Corian® the required depth of the buildup by a length which provides 4" (102 mm) returns from each end of the inside corner radius. Calculate the required depth of the buildup by subtracting the thickness of the sheet from the required countertop thickness plus the depth of the rabbet. Calculate the required length of the thermoformed piece by referring to the formula in section above.

9. Using the techniques detailed in section 16.2 on thermoforming, thermoform the strip to the required radius.
10. Glue the thermoformed buildup piece in the inside corner as described in Section 12.7, steps 3 and 4.

12.10 USING THE LAMINATED METHOD FOR OUTSIDE CORNERS

STEPS FOR COMPLETION:

1. Using material color-matched to the countertop, create blocks 8" x 6" (203 mm x 152 mm) sufficient to make up the required buildup depth. The number of blocks required in the Laminated Method can be calculated by using the same method as for an inside corner.
2. Sand the blocks to ensure a perfectly flush face fit for all blocks.
3. Apply a perfectly even layer (i.e., no "S" pattern or similar) of Corian® Joint Adhesive to the faces of all blocks to be seamed.
4. Clamp the layers together and allow to set.
5. Upon setting, sand two return sides of the block to a smooth finish.
6. Scribe outside radius, inside radius and returns onto block.
7. Using a belt sander or router, remove the section to complete the outside radius.
8. Using hot-melt glue, adhere the partially completed block onto a secure work surface that allows room for a radius template.
9. Clamp radius template to laminate block into position.
10. Rout along the template to complete the piece.
11. Double-check that the ends of the outside corner piece are well-finished and perfectly square.
12. Finish as described in Section 12.6, steps 14–18.

12.11 USING THE THERMOFORMED METHOD FOR OUTSIDE CORNERS

STEPS FOR COMPLETION:

1. Using a piece of material color-matched to the sheet surface, prepare a strip of Corian® the required depth of the buildup by a length which provides 4" (102 mm) returns from each end of the inside corner radius. Calculate the required depth of the build up by subtracting the thickness of the sheet from the required countertop thickness plus the depth of the rabbet. Calculate the required length of the thermoformed piece by using the formula described in the section on thermoformed inside corners.
2. Using the techniques detailed in Section 16.2 on thermoforming, thermoform the strip to the required radius.
3. Finish as described in Section 12.7, steps 3 and 4.

CHAPTER 12.12

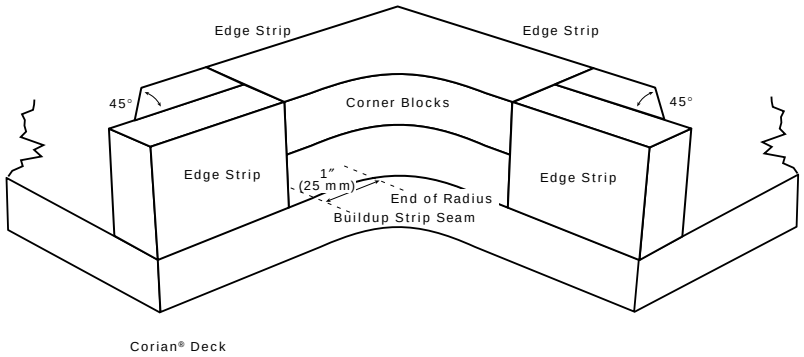
LAMINATED METHOD ALTERNATIVES

The following are variations of the laminated method for making inside corners:

1. Drop Edge

- Prepare blocks as described earlier. Be sure they are large enough to position the butt seams between the buildup strips and blocks at least 1" (25 mm) past the end of the radius on both sides of the block.
- With top upside-down, dry-clamp block in the inside corner with the back of the block 1" (25 mm) from the front edge. Dry-fit the edge buildup pieces to the block and dry-clamp in place.
- Cut two pieces of edge strip about 3" (76 mm) to 4" (102 mm) long and square on one end and beveled to 45° on the other end. Dry-fit the square end against the corner block. Dry-clamp these strips behind the front edge strips. Be sure that the backs of these strips are perfectly flush with the back of the corner block and that the tapered end dies into the back of the buildup strip.
- Seam all pieces in place and together, and finish in the usual manner. See Figure 12.12.A.

Figure 12.12.A



Helpful Hint:

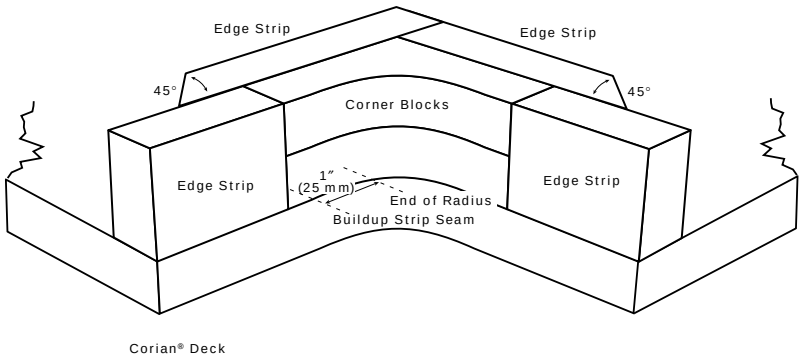
Use hot-melt glue blocks to keep all pieces in position until adhesive sets.

2. Drop Edge Alternative

- Prepare inside corner blocks as described earlier.
- With the top upside down, dry-clamp the block into the inside corner with the back of the block 1/2" (13 mm) back from the front edge.
- Dry-fit buildup strips to the sides of the block and dry-clamp in place.

- Cut two strips long enough to overlap behind the corner block and extend about 2" (51 mm) past the butt seams between the buildups and the corner block. The overlapping ends may be left square but must be flush with each other. The opposite ends are to be tapered to 45° with the tapered ends dying into the front buildup strips.
- Seam all pieces in place and to each other, and finish in the usual manner. See Figure 12.12.B.

Figure 12.12.B



3. Stack Front Edge

Cut blocks to form inside corner so that each layer is offset by 1/2" (13 mm) from the preceding layer. Be sure to size the block so that the edges of the smallest layer are at least 1" (25 mm) past the radius on both sides of the inside corner.

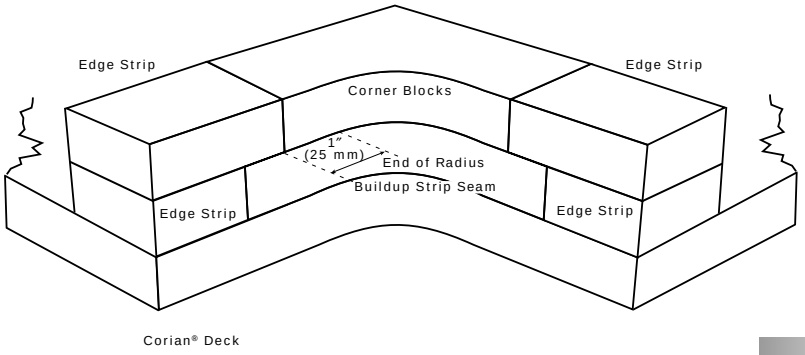
With the top upside-down, dry-clamp the blocks in the inside corner so that a stair-step effect is seen where the buildup strips butt into the corner block. Be sure that the backs of the strips are perfectly flush with the corner blocks.

Dry-fit the edge strip pieces to the corner blocks and dry-clamp.

Apply enough hot-melt glue blocks behind the edge strips and the corner blocks to ensure that all pieces will remain flush until after the adhesive sets.

Seam all pieces in place and to each other and finish in the usual manner. See Figure 12.12.C.

Figure 12.12.C



12.13 STACK EDGE

The basic edge build up is the stack edge. The edge strips, of widths from 1" to 3", are applied in layers. This allows the edge pieces to rest on the cabinet eliminating the need for wood support strips along the front of the countertop.

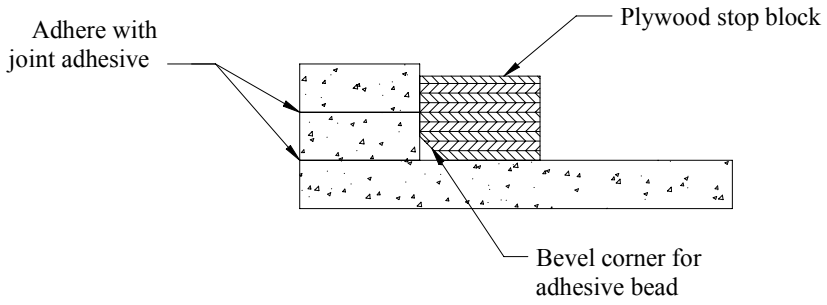
To apply the edge detail, precut the strips and arrange them in layers overlapping the butt seams for added strength.

Stop blocks can be used to align layers during glue up. Use spring clamps to apply pressure until adhesive sets. Place clamps about 2" to 3" apart.

After the adhesive sets, trim excess adhesive using a router and straightedge.

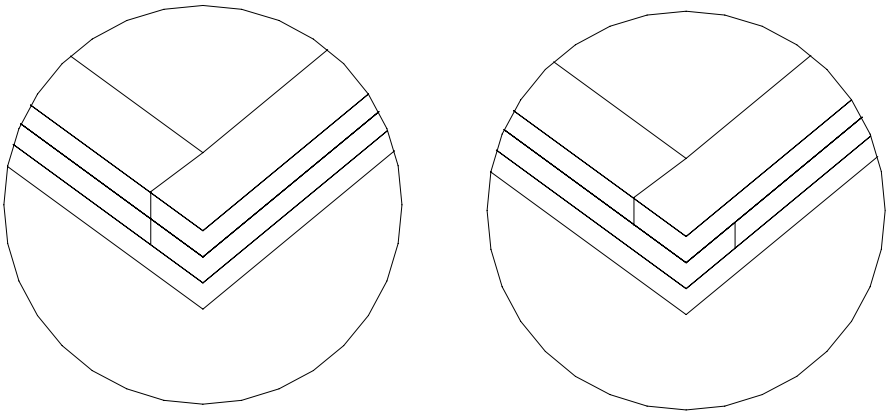
Apply decorative edge profile as desired.

Figure 12.13.A



Make inside corners as shown in Fig 12.12.C. Outside corners may be made by simply butting the strips together or by alternating the seams in the layers. See Figure 12.13.B.

Figure 12.13.B



Helpful Hints:

Spring clamps can be angled to apply directional pressure to keep keep layers against stop blocks to keep butt seams from opening.

12.14 EDGE TREATMENTS

Other decorative edge treatments can create unique design elements to fabrication techniques.

Examples of popular edge treatments include:

- Bull nose
- Roundover
- Ogee
- Chamfered

Fabrication techniques for all edge treatments are the same, using different router bits to create the distinctions.

STEPS TO COMPLETION:

1. Upon completion of attachment of all buildup, including inside and outside corners, use a flush-cut trimmer or router and straightedge to finish buildup flush and square with countertop.
2. Sand smooth any edge imperfections.
3. Select the appropriate router bit, ensuring the bit is fitted with a roller bearing, and place this in a $1^{1}/_{2}$-hp router or larger.
4. Routing from left to right, rout all edges on the face side of the countertop. Make sure that the router is kept level and square on the countertop.
5. Turn the countertop over and repeat step 4 on the bottom edge of the buildup if required.

Helpful Hints:

Conduct a trial run on a scrap piece of material to check depth and shape of router cut before completing any edge treatment on finished work.

Do not rush, as rushing causes a rougher cut which requires more finishing.

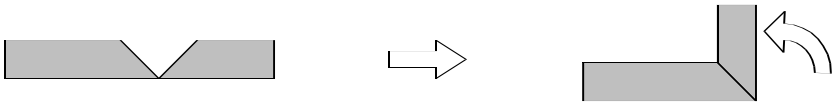
Some manufacturers make router bits that will shape the underside of the countertop edge without needing to turn the top over.

12.15 V -GROOVE EDGES

V-Grooving, or Cut-and-fold, was originally developed for woodworking and laminates. Advantages are process speed and hidden seam. Surface aesthetics, such as veining, can be continuous around edges with this technique. More complicated shapes such as folded edges and cove backsplashes can be easily formed at no additional cost. See Figure 12.15.A

Figure 12.15.A

V-Groove Cross-Section



Tools and Equipment:

•Dedicated V-groove machine.
• Other equipment modified for V-grooving - Vertical Panel Saw
• V-Groove tooling (Cutters may be C4-carbide or diamond; brazed or insert style tool configuration)
• Clamps or clamp table
• Corner clamps
• 3M Type 355 tape
• Compressed air and nozzle
• Router and bits
• Palm sander
• DuPont joint adhesive for Corian®
• Hot melt glue and pressure-feed glue gun

Steps To Completion:

1. Set up machine.
Caution: Do Not set v-groove cutter to penetrate completely through sheet. Leave the thickness of a business card at the bottom of the groove.
2. Cut Corian® piece to overall size.
3. Energize machine and make horizontal cuts as required.
4. Repeat steps as necessary until all cuts have been made.

Bonding Groove Joints:

1. Blow dust out of grooves with clean, dry compressed air.
NOTE: If the piece has been sitting for 24 hours or longer since the grooves were cut, they may be contaminated with airborne oil or moisture condensate. Wipe the grooves with a clean lint-free rag moistened with denatured alcohol.
2. Mix DuPont joint adhesive for Corian® following manufacturer's instructions.
3. Apply a 1/8-inch (3-mm) bead of adhesive in the very bottom of the groove (see Figure 12.15B). Wait 30 seconds to 1 minute for trapped air to escape.

Figure 12.15.B

Adhesive in V-groove

4. Slowly fold the piece to close the groove, allowing adhesive to flow upward and fill the joint as the groove closes. A small amount of excess adhesive should squeeze out of the joint in the corner.

CAUTION: Don't allow the joint to re-open, or air bubbles will enter the joint.

5. Clamp the piece in position for 45 minutes. When clamping, apply force directly against the tape behind the glued joint, not at the ends of the piece (see Figure 3).

• Use sliding clamps spaced approximately 18 inches (45 cm) apart.

• For joints near the end of a long piece, temporarily glue a clamping block to the piece with hot melt glue and modify the clamp as shown in Figure 12.15.C.

• For production runs, use a clamping table (see Figure 12.15.D).

Figure 12.15.C

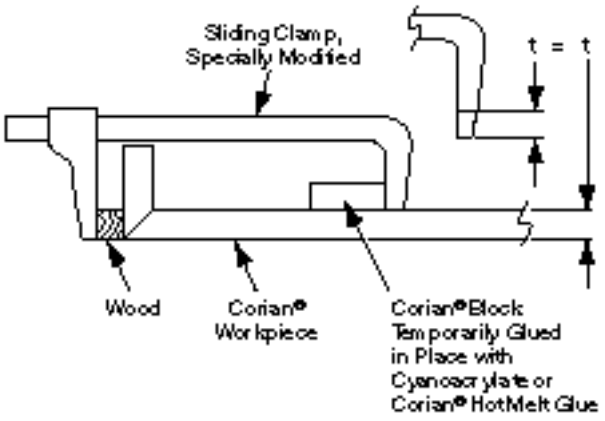
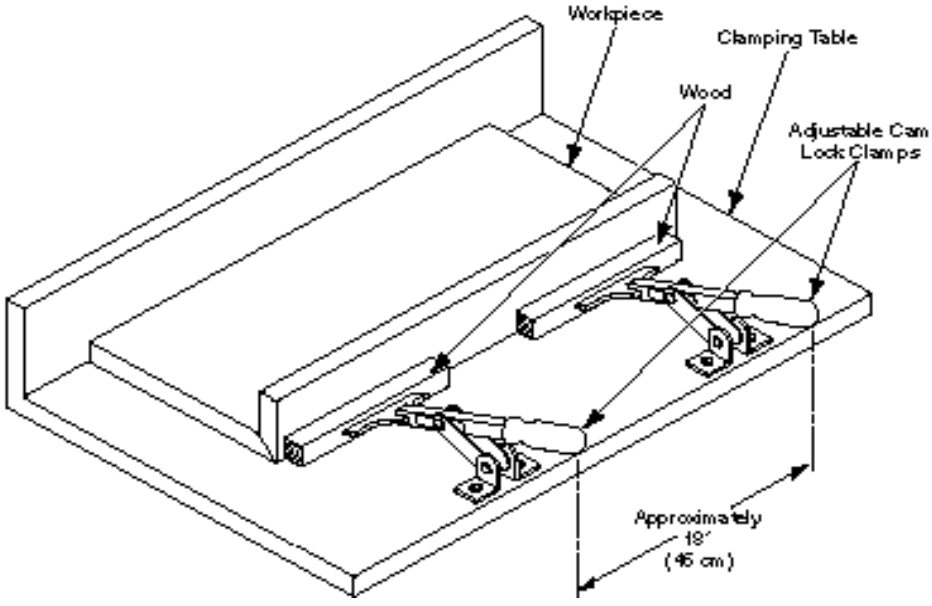

Sliding Clamp, Specially Modified
t = t
Wood
Corian® Workpiece
Corian® Block Temporarily Glued in Place with Cyanoacrylate or Corian® HotMelt Glue

Figure 12.15.D



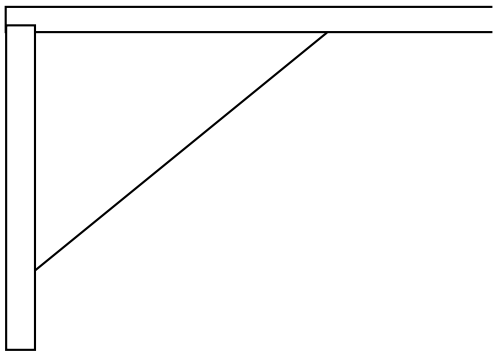
12.16 APRON SUPPORT

Often the apron or skirt is subjected to the most wear and tear of any part of the installation, especially in commercial applications. In order to have a long-lasting installation, additional support is essential in instances where the edge piece extends greater than 2" (51 mm) beyond the frame support.

This additional support can be formed in either of two ways:

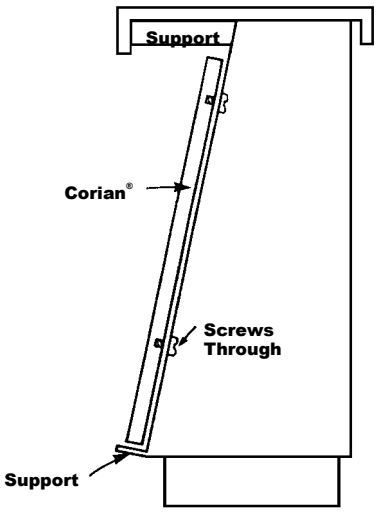
1. Triangular brackets of Corian® glued to countertop and apron.

FIGURE 12.16.A



2. Mechanical (frame) supports.

FIGURE 12.16.B



STEPS TO COMPLETION:

Mechanical Supports:

1. Upon completion of the countertop and apron, identify where mechanical support can be attached.
2. Alternative mechanical support can be made through creating an "L" bracket under support or "U" channel under support.

Triangular Bracket Fixing:

1. If no mechanical support is possible, construct triangular brackets made from 1/2" (13 mm) Corian®.
2. Place brackets every 20" (508 mm).
3. Glue brackets to countertop and apron using Corian® Joint Adhesive.

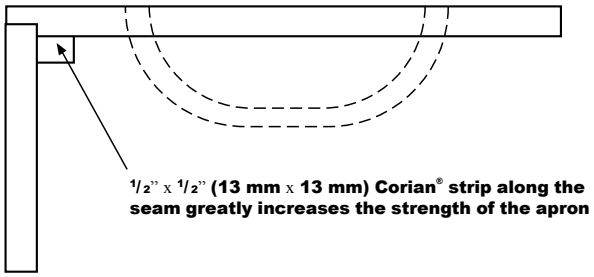
Helpful Hints:

If the apron is required to be backlit, and triangular brackets have been used for support, apply a coat of acrylic paint to the inside face to prevent brackets shadowing.

Always use the same thickness as the sheet material for triangular brackets.

Because an apron is typically at countertop height, it can be subject to much abuse. Support behind the apron is a safeguard against cracking and seam failure.

FIGURE 12.16.C



13.1

STANDARD HEIGHT BACKSPLASH

The Standard Height Backsplash describes a return up the vertical wall behind the countertop that is seamed to the countertop with a simple butt seam.

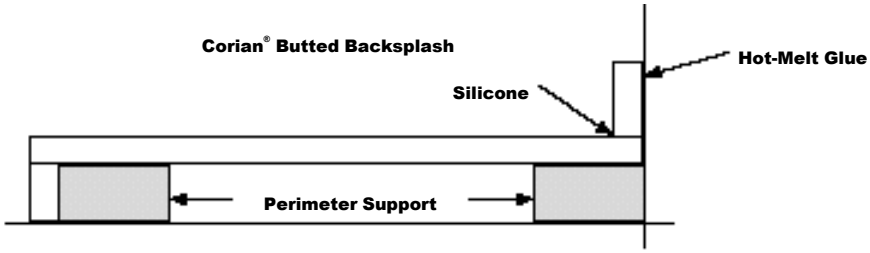


Figure 13.1.A

This method is a quick and simple method of adding value to a Corian® countertop and is glued using silicone.

STEPS TO COMPLETION:

1. After the countertop has been installed, recheck for level and measure from countertop to desired height of backsplash.
2. Check for any obstructions along the wall such as power outlets, window-sills and any other obstructions.
3. Cut the backsplash to approximate size and place sections in position.
4. Scribe to the countertop.
5. Trim to pencil lines and recheck for fit.
6. Remove any nonpermanent obstruction from the wall that will prevent a close fit of the backsplash to the wall. In addition, make any cutouts required to accommodate power outlets, windowsills, etc.
7. Wipe edge face and countertop to be seamed with clear, denatured alcohol.
8. Select color-matched, mildew-resistant silicone and apply a large bead along the entire seam area.
9. Every 20” (508 mm) apply a small dab of hot-melt glue to the wall to provide added fixing.
10. Place the backsplash in position and,wipe surplus adhesive from the seam angle.
11. Use the “push” method to seal between the backsplash and deck.

NOTE:

Do not adhere splash to the wall. This will cause separation during settling.

If backsplash butts into underside of windowsill, seal between them using silicone. Do Not use joint adhesive as this may restrict expansion/contraction.

Helpful Hints:

Leave a small radius in the inside corner to make cleaning easier. Wipe up excess silicone using a rag dampened with denatured alcohol.

13.2 COVED BACKSPLASH METHODS

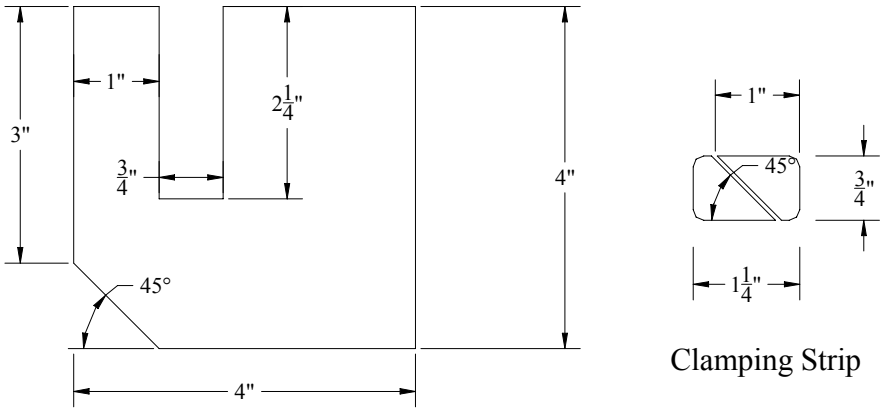
Note:
The DuPont Corian® Coved Backsplash is for use only with DuPont Corian® sheet. Use with any other material may void the warranty.

Material Needed:

To make installation as quick as possible, the following special supplies are needed:

1. Squaring blocks @ 1 per 12” (305 mm) of backsplash length plus one for each inside and outside corner. See Figure 13.2.A.
2. Wooden clamping strips sufficient to cover entire length of backsplash. To make, run pieces of 1” x 3” (25 mm x 76 mm) wood lathe or 3/4” (19 mm) plywood through table saw with blade set to 45 degrees. Cut to dimensions shown in Figure 13.2.A.
3. 3M #232 masking tape.
4. Several 1/2” x 1” x 2” (13 mm x 25 mm x 51 mm) Corian® blocks wrapped with aluminum tape to dam ends.
5. 1/2” double-flute, carbide-tipped router bit.

Figure 13.2.A



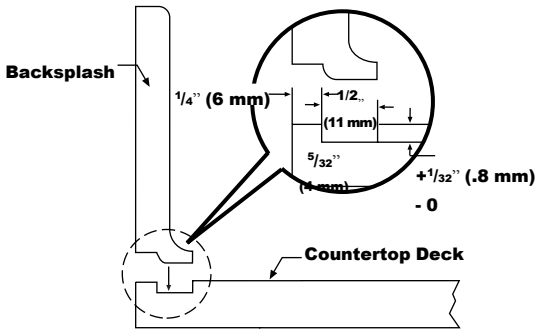
Squaring Block

Clamping Strip

Procedure:

1. Use router equipped with 1/2" (12.7 mm) bit and straightedge or edge guide to rout groove in back of countertop as shown in Figure 13.2.B.

Figure 13.2.B



2. Check depth of groove with small piece of backsplash. Rerout if necessary.
3. Cut backsplash pieces to length. Miter all inside and outside corners. If run is longer than a full-sized backsplash piece, be sure to color-match butting pieces.

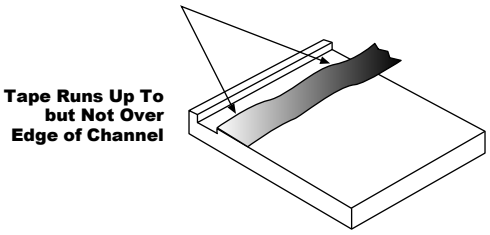


Figure 13.2.C

4. Apply #232 masking tape within 1/32" (.8 mm) of, and along entire length of, the groove. See Figure 13.2.C.
5. Apply #232 masking tape in cove of backsplash piece, allowing it to overhang slightly. Trim back to "toe" with sharp knife.
   Caution: Do not scrape or scratch the toe of backsplash. This will cause whitened areas in seam.
6. If splash is to be butt-seamed, apply tape to within 1/32" (.8 mm) of seam on butting pieces.

7. Using plenty of hot-melt glue, apply a wood clamping strip to the underside of countertop. Then attach a strip to the backside of the splash piece. See Figure 13.2.D.

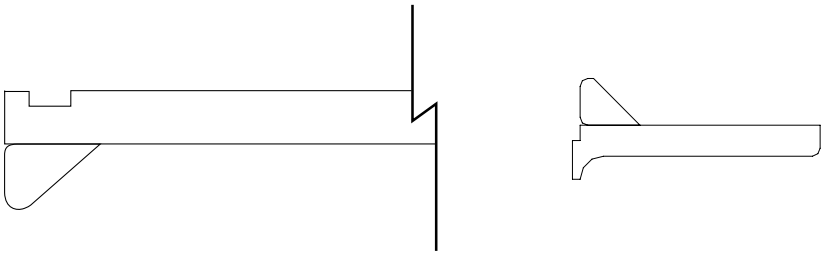


Figure 13.2.D

8. Carefully place backsplash pieces in groove. Apply 2" (51 mm) spring clamps at 4" intervals all along backsplash See Figure 13.2.E.

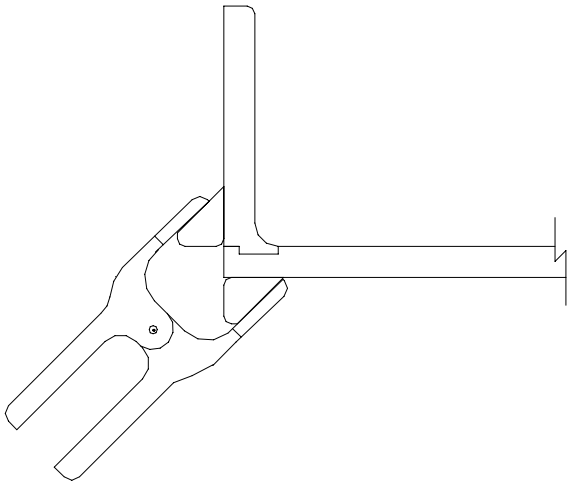


Figure 13.2.E

9. Position a squaring block, with 45 degrees cut near cove, at 12" to 14" intervals. Adjust splash piece so that blocks rest flush against backsplash and deck. Apply hot-melt glue to where block rests on deck. See Figure 13.2.F.

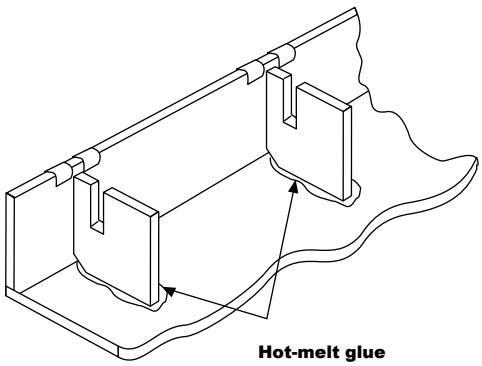
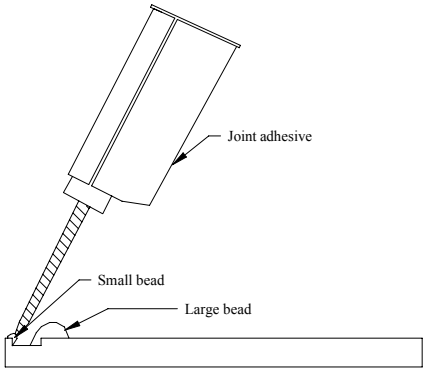


Figure 13.2.F

10. Remove all clamps, remove backsplash from groove. Thoroughly clean all areas to be seamed with denatured alcohol and a clean, white rag.

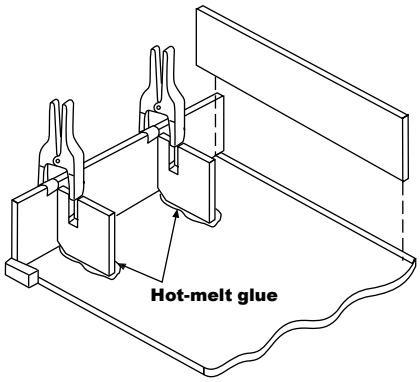
Figure 13.2.G



11. Prepare Joint Adhesive. Allow one tube for each 10' length of backsplash. Apply continuous, large bead along cove edge of groove and 3" (76 mm) beads about 2" (51 mm) apart along back of groove. See Figure 13.2.G.

12. Place backsplash piece in groove. Press firmly so that adhesive squeezes out all along seam area. Align ends of splash with ends of deck. Apply 2" (51 mm) spring clamps at 4" intervals along the backsplash. . Apply spring clamps between backsplash and squaring blocks. Use hot-melt glue to fasten Corian® blocks wrapped with tape to dam seams at ends of deck. See Figure 13.2.H.

Figure 13.2.H



13. After adhesive is set, remove all clamps, squaring blocks and Corian® blocks. Remove wooden clamping strip.

Note:

Spray hot-melt glue with denatured alcohol to ease removal of blocks and clamping strips.

14. Use putty knife to loosen excess adhesive at one end of cove area. Peel masking tape to remove adhesive.

15. Finish sand cove area to specified gloss level.

Note:
A molding scraper or cabinet scraper with a 1/4" (6 mm) radius ground onto one corner can be used to begin smoothing process. Finish to desired gloss.

Helpful Hints:

When 1/2" (12.7 mm) router bit becomes dull, have bit sharpener grind off the dull section from the bottom.

Typical sharpening will reduce bit diameter leaning.

13.3

USING THE COVING ROUTER METHOD

Do not fabricate a full-height, 1/4" (6 mm) coved backsplash. The chances of a failure at the cove is too great.

Coved Backsplash with Butt-Seamed Corners

Note: For more information, contact router manufacturer

STEPS TO COMPLETION:

1. Place the Corian® sheet on a level workbench with easy working access to the rear of the sheet where the backsplash is to be built.
2. Cove strip: With an accurate straightedge, a two-flute cutter and a 3-hp router, true the back edge of the sheet. This will become the leading edge of the cove strip.
3. Optional: Using a router, rout a 45°, 5/16" (7.9 mm) bevel along the back edge to reduce cove routing later. This 45-degree bevel will be 1/16" (1.5 mm) undersized to allow material for the cove router to cut after glue-up.
4. Cove strip: Rip the cove strip from the back of the sheet to exact size, 7/8" (22 mm) from edge. Cut countertop to correct depth.
5. Countertop: Make a rabbet 1/8" (3 mm) deep by 7/8" (22 mm) wide the length of the back edge to be coved. A 1" (25 mm) diameter, two-flute cutter in a 3-hp router works well for this step.
6. Cove strip: Cut the beveled cove strip to length. At corners, miter-cut the strip and dry-fit.
7. Clean the countertop rabbet and cove strip thoroughly with denatured alcohol.

Note:
Apply 3M #232 tape along the countertop 1/32" (.74 mm) away from rabbet to reduce cleanup.

8. Apply Corian® Joint Adhesive along shoulder of the countertop rabbet and a thin bead 1/4" (6 mm) from back edge.

9. Carefully spring-clamp the cove strip into position. Apply spring clamps every 2" (51 mm), forcing the cove strip forward.
10. Backsplash: Rip the backsplash to desired height or width, noting the 3/8" (10 mm) rise of the cove strip in the countertop. Repeating step 2 above is recommended on the seaming edge. Allow 1/16" (1.5 mm) additional width for cleanup.
11. Clean up adhesive at cove strip corner seams as necessary and dry-clamp backsplash in position. Inspect for perfect fit.
12. Hot-melt squaring blocks (see Figure 13.2.A) every 6" to 12" (152 mm to 305 mm) as needed to hold backsplash in 90° position.
13. Clean cove strip and backsplash thoroughly with denatured alcohol.

Note:
If backsplash is butt-seamed at corner, apply 3M #232 tape to within 1/32" (.74 mm) of seam on butting pieces to expedite cleanup.

14. Apply Corian® Joint Adhesive along cove strip and clamp backsplash into place. Check that backsplash is flush against squaring blocks. Do not over-tighten bar clamps.
15. Allow Corian® Joint Adhesive to cure 45 to 60 minutes. Remove 3M #232 tape and excess adhesive.
16. Remove all clamps and squaring blocks. Clean and inspect the coving router path. Debris will hamper the coving procedure.
17. Coving router: Inspect the coving router adjustment before beginning. The 3/8" (10 mm) cutter head should be sharp and set at a paper's thickness above the countertop and away from the backsplash. This will allow for sanding and finishing. Rout with a pulling motion left to right where possible. This allows the cutter to run cool and yields better results.
18. **Sanding**

Caution: Use random orbital sanders with care. They are designed to sand flat surfaces. Pushing them against coved backsplash will result in a tunnel effect. This is not acceptable.

Finish-sand as described in Chapter 18.

Note:
A 3/8" (10 mm) furniture scraper can be used before sanding to carefully remove excess glue. Take care not to add scratches requiring additional sanding.

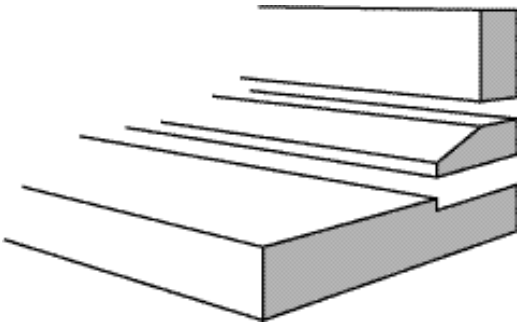
Coved Backsplash with Coved Inside Corners

STEPS TO COMPLETION

Follow the procedures for butt-seamed corners, with the following exceptions:

1. Coving strip: Stop the optional bevel (step 3 above) about 1" (25 mm) from the corner. This allows material for the coving router to shape after glue-up. Butt-seam the corner.
2. Backsplash: The end of one backsplash panel will need to be rabbeted as in step #5 above. See Figure 13.3.A. Rip the backsplash panel oversized to allow for cleanup later. Then follow steps 6–9 above.

Figure 13.3.A



Exploded View of Block Insert Method

3. After adhering a cove strip to the backsplash panel, clean up by routing or sanding, and complete the glue-up procedures in steps 10–18 above.

Helpful Hints:

It's important that all parts fit perfectly. Special attention is required at inside/outside corners to ensure good fit. Corian® glue is never used as a gap filler.

Because of the unique characteristics of Lustra and the Venaro Colors of Corian®, coving may not match the sheet pattern unless V-grooved. It's advisable to inform the end consumer of this outcome to ensure their satisfaction at completion.

14.1

CORIAN® TO WOOD/PLYWOOD

Corian® can be glued to wood or plywood to provide many unique design applications.

This can be done by using two forms of adhesives:

1. Silicone

Silicone is best used where movement and cushioning are required in the Corian®.

2. Clear Contact Adhesive

Clear contact adhesive is used in applications where appearance and quick adhesion are important, such as in edge details or inlays into Corian®. However, great care is needed to insure that the Corian® and wood can move independently.

Helpful Hints:

Use only the above-mentioned adhesives, which allow both materials to expand and contract at a different rate.

It is essential that the adhesive is invisible and at all times forms a waterproof seal.

Do not screw through wood into Corian® without inserting the brass insert. This will cause "star" cracks to form.

Do not use adhesives such as P.V.A. or glues based on the M.E.K. (ketone) family.

STEPS TO COMPLETION:

Silicone

1. Clean both surfaces that are to be glued together thoroughly with clear, denatured alcohol.
2. If flexibility is a potential problem with the application, place dabs of silicone approximately 4" (102 mm) apart on the surface that is to be glued to.

   Where flexibility is not as essential, place a bead of silicone around the perimeter of the surface to be glued to, and place an "S" pattern bead through the center.
3. Press the Corian® or wood into position and firmly clamp.

Clear Contact Adhesive

Note: Contact cement is best suited for small piece, i.e., pieces smaller than 12" in length.

1. Clean both surfaces to be glued with medium sandpaper. Remove all dust.
2. Spread the clear contact over both Corian® and wood surfaces to be glued, making sure the adhesive is in a thin, even coat.
3. Wait until both surfaces are dry to touch, then carefully position and clamp together.
4. Lightly sand face edges, using care not to disturb finished wood.

Helpful Hints:

Be careful you do not damage lacquered finishes when using solvents to wipe away glue spill.

Corian® is translucent. Any other color contact cement than clear may result in "show through" around the edges.

14.2 CORIAN® TO METAL

Corian® can be glued to metal to provide many unique design applications.

Silicone adhesive: suitable for glass adhesion is used for this process.

STEPS TO COMPLETION:

1. Be sure that there are no raised points touching the Corian®.
2. If metal is painted or coated, sand away this coating in areas where adhesive will form contact.
3. Clean both surfaces that are to be seamed together thoroughly with clear, denatured alcohol.
4. Place dabs of silicone (approximately 1" [25 mm] round) on the surface that is to be glued to, approximately 12" (305 mm) apart.
5. Press the Corian® or metal into position and clamp firmly.
6. Where caulking is required, use color-matched silicone to seal the seam.

Helpful Hints:

Do not use any type of adhesive other than glass silicone.

If metal is to be mechanically fixed to the Corian®, then brass inserts should be employed.

If a metal bolt is to go through the Corian®, it is recommended that an enlarged hole be drilled and a rubber insert be placed in the hole to allow movement of the two products.

If possible, put wood between the metal and the Corian® (i.e., screw the wood onto the metal and glue Corian® onto the wood).

14.3 CORIAN® TO GLASS

Corian® can be glued to glass to provide many unique design applications.

Clear silicone: suitable for glass adhesion is used for this process.

STEPS TO COMPLETION:

1. Clean both surfaces that are to be seamed together thoroughly with clear, denatured alcohol.
2. Place dabs of silicone (approximately 1" [25 mm] round) on the surface that is to be glued to, approximately 6" (152 mm) apart.
3. Press the Corian® or glass into position and clamp firmly.
4. Where caulking is required, use color-matched silicone to seal the seam.

Helpful Hints:

Do not use any adhesive that would be unsightly through the glass, such as white-colored silicone or contact adhesive.

If mechanical fixing is required into the Corian®, remember that brass inserts are required to take the screws. If the fixing is to pass through Corian® into the wall behind, ensure an oversized pilot hole is completed first.

Keep in mind that both acrylic and glass are heavy and brittle. Because of silicone's rubber-like properties, it is ideal for adhesion and impact absorption.

14.4 CORIAN® TO ACRYLIC

Corian® can be glued to acrylic to provide many unique design applications.

To glue acrylic to Corian®, use **Corian® Joint Adhesive** or **clear acrylic adhesive.**

STEPS TO COMPLETION:

1. Prepare both pieces to be seamed by ensuring a perfect fit, and then lightly sand.
2. Clean both surfaces that are to be seamed together thoroughly with clear, denatured alcohol.
3. Apply a generous quantity of Corian® Joint Adhesive or clear acrylic adhesive to one surface.
4. Press the pieces together in position, clamp firmly and allow to dry.
5. Trim the seam with a router, then sand to the desired finish level.

Helpful Hints:

Ensure that the acrylic is a good fit, as water-clear adhesives have no gap-filling qualities.

Do not use any glue that is ketone-based.

Do not use extruded acrylic.

15.1 TOOLS REQUIRED

The installation of Corian® shape product must be a precise and exacting process to ensure that a good fit is always created.

Using the correct tools is essential. In addition, the condition of all tools must be high-quality, bits must be sharp, and guards and fences accurate and precise.

These items are essential for all shape mounting:

Traditional Undermount:

- strong, level workbench that allows for the shape when installed
- a 3-hp router with a 1" (25 mm) template guide and a 1/2" (13 mm) collet
- appropriate template for shape model being installed

"S" Method (Undermount):

- strong, level workbench allows for the shape when installed
- a 3-hp router with a 1" (25 mm) template guide and a 1/2" (13 mm) collet
- accurate template for shape model being installed
- the recommended two router bits for doing seamed mounting:
  - 3/8" (10 mm) single-flute, carbide-tipped bit
  - combination bit

Helpful Hints:

If making your own templates, ensure that you use high-quality material and that they are precise in their manufacture.

Do not use inappropriate router bits.

15.2

TRADITIONAL UNDERMOUNT

Note:

The procedures for installing undermount kitchen (below) and bar/vanity sinks and lavatories differ. Refer to the procedure that corresponds to the type of undermount sink or lavatory you are installing.

15.2.1

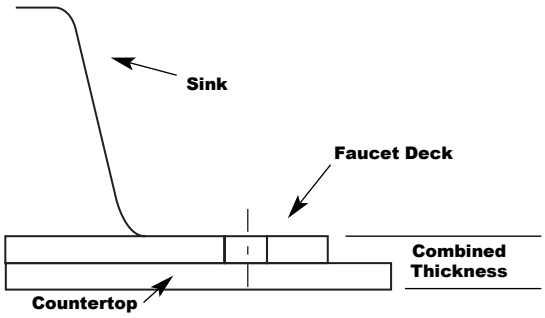
TRADITIONAL UNDERMOUNT - KITCHEN SINKS

Fabricating and Installing Traditional Undermount Kitchen Sinks

1. Prepare the bowl.

- Check to see if the faucet assembly can clear the combined thickness of the Corian® countertop and sink (see Figure 15.2.A). It may be necessary to change faucet sets.

Figure 15.2.A



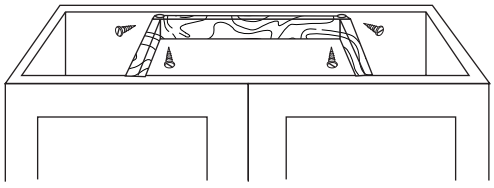
2. Prepare the support frame for kitchen sinks.

- Measure the size of the kitchen cabinet opening where the sink will be installed.
- Construct a plywood frame, allowing adequate clearance between the strips running front to back. These will support the sink. See recommended clearances on the templates.
- Position the frame within the cabinet opening so that when the sink is installed, the top of the sink flange is level and flush with the top surface of the perimeter support at the cutout area.
- Firmly attach the frame to the cabinet interior with screws (see Figure 15.2.B).

Note:

There are commercially available support systems designed to support undermount sinks. See Chapter 28, Section 28.1.10 for sources.

Figure 15.2.B

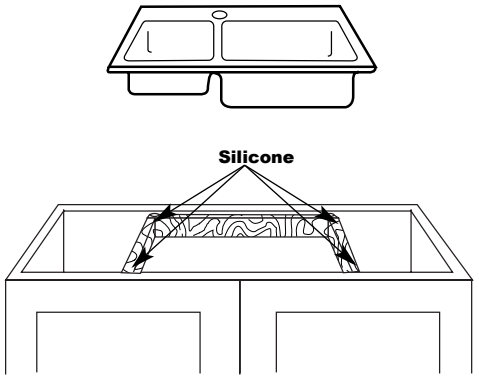


3. Install the sink in the frame.

- Place a 1" (25 mm) spot of silicone at each corner of the frame where it will contact the sink.

• Gently position the sink within the frame (see Figure 15.2.B).
• Check the sink flange for levelness and for proper mating height with the perimeter support at the cutout area. Adjust or shim, if needed.

Figure 15.2.C



4. Prepare the sheet.

• Cut the sheet for the countertop to the proper length and width.
• Trial-fit and adjust, if needed.

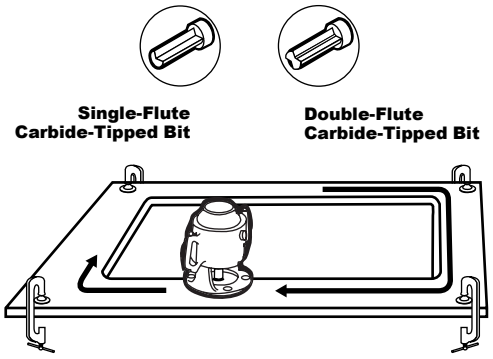
5. Position and secure the template for the cutout.

• Carefully measure the countertop to determine the exact location of the cutout.
• Clamp the template in position.

6. Rout the cutout.

• Make the cutout using a 2-hp to 3-hp router with a 1" (25 mm) template guide and a 3/8" (10 mm) carbide-tipped, single-flute router bit (see Figure 15.2.D).
• Rout the faucet holes. (Faucet holes can be made using a hard template and router or a high-speed electric drill with either a spade bit, twist drill or hole saw. Do not use auger bits.)
• To minimize sanding, smooth the inside of the cutout with a 1/2" (13 mm) double-flute, carbide-tipped bit and a 1" (25 mm) template guide.
• Remove the template.
• Use an orbital sander to smooth the cutout area and to remove all router marks.
• Rout decorative design into edge of cutout if desired.

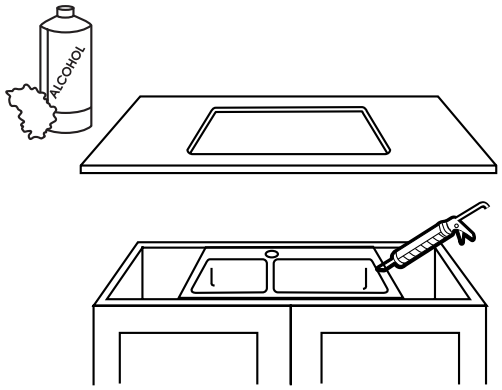
Figure 15.2.D



7. Install the countertop over the sink.

- Clean the top of the sink flange with denatured alcohol and a clean, white cloth (see Figure 15.2.E).
- Clean the bottom of the countertop around the cutout area with denatured alcohol and a clean, white cloth.
- Apply a generous bead of color-matched Silicone Sealant around the top inside edge of the flange (where sink wall and flange meet).
- Position the countertop over the sink, being careful that the Silicone Sealant provides a complete seal where the surfaces mate.
- Remove the excess sealant; then wipe the joint with denatured alcohol and a clean, white cloth.

Figure 15.2.E



15.2.2 TRADITIONAL UNDERMOUNT - BAR AND VANIITY SINKS

Fabricating and Installing Undermount Bar/Vanity Sinks and Lavatories

1. Turn sheet upside-down and position and secure the template for the cutout.

- Use a 2-hp to 3-hp router with a 1" (25 mm) template guide and a $^{3}/_{8}$" (10 mm) carbide-tipped, single-flute bit (see Figure 15.2.F).
- Remove the template.
- Use an orbital sander to smooth the cutout if needed (see Figure 15.2.G).

Figure 15.2.F

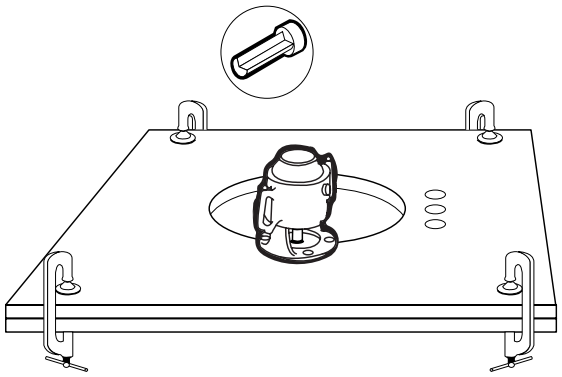
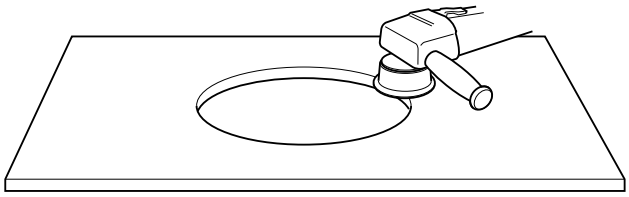
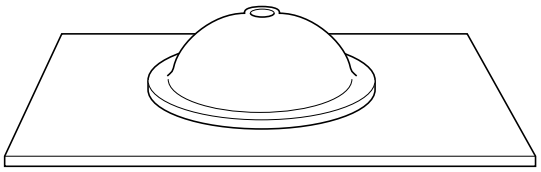


Figure 15.2.G



3. Trial-fit the bowl.
- Position the bowl over the cutout, checking for a tight fit (see Figure 15.2.H).
- Modify and re-sand the sheet, if needed.

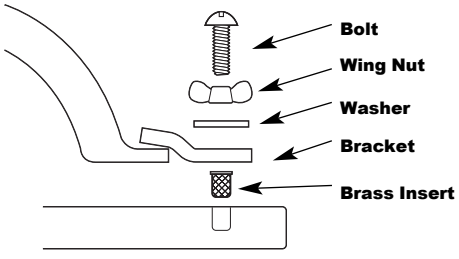
Figure 15.2.H



4. Make the faucet holes.
- Use a template and a router or a high-speed electric drill equipped with either a spade bit, twist drill or hole saw.
- **Do not use auger bits.**

5. Install brass inserts.
- Center the bowl face-down over the cutout.
- Locate the holes 1" (25 mm) from the side edges of the bowl flange and away from the bowl's front and back edges to allow clips to clear the cabinet frame (see Figure 15.2.I).
- Drill holes 1/4" (6 mm) wide by 1/4" (6 mm) deep into the sheet.
- Remove the bowl and drive the brass inserts into the holes in the countertop, slotted end in first.

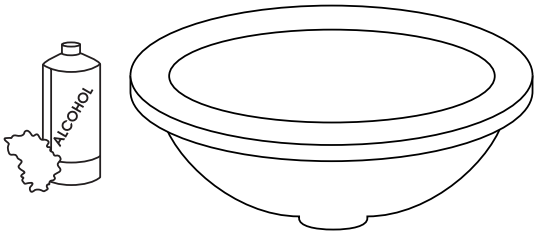
Figure 15.2.I



6. Fasten the bowl to the top.
- Clean the bowl's top flange and the cutout with denatured alcohol and a clean, white cloth (see Figure 15.2.J).
- Assemble the undermount hardware (see Figure 15.2.I).
- Screw the bolt assemblies into the brass inserts.
- Apply a generous bead of color-matched Silicone Sealant to the inside edge of the bowl flange (see Figure 15.2.J).

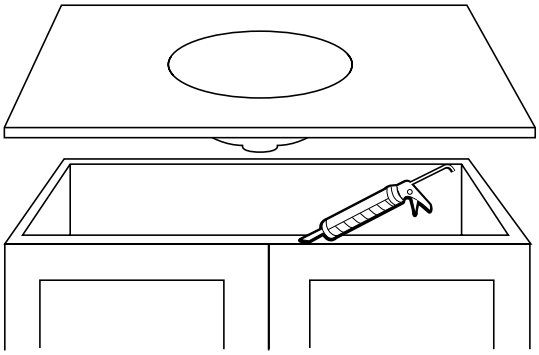
• Install the bowl over the cutout.
• Tighten the wing nuts to secure the bowl.
• Make sure that the joint is completely filled, then remove the excess sealant with denatured alcohol and a clean, white cloth.

Figure 15.2.J



7. Install the countertop and sink on the cabinet.
• Place a 1" (25 mm) spot of flexible adhesive, such as Silicone Sealant for DuPont Corian®, every 12" (305 mm) around the top cabinet support (see Figure 15.2.K).
• Position the bowl and countertop unit on the support.

Figure 15.2.K

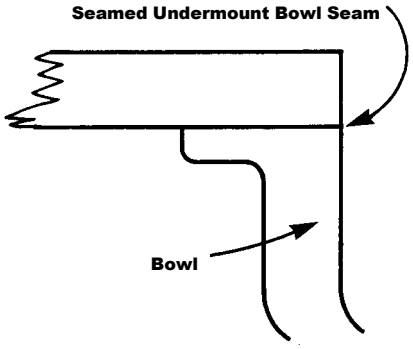


15.3 "S" METHOD (UNDERMOUNT)

The "S" version sink is glued to the underside of the countertop.

The seam is then on the vertical plane of the sink, as illustrated in Figure 15.3.A.

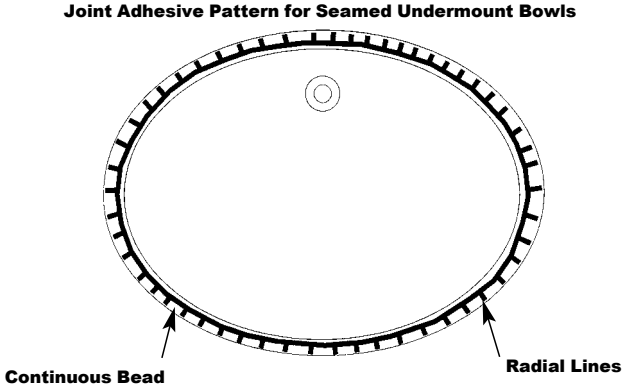
Figure 15.3.A



STEPS TO COMPLETION:

1. Turn the sheet over and sand the area that the shape will be positioned on until smooth.
2. Clamp the template into position (sheet still upside-down).
3. Using a 3-hp router fitted with 1" (25 mm) template guide and $^{3}/_{8}$" (10 mm) single-flute, carbide-tipped bit, rout the bowl cutout.
4. Remove the template and trial-fit bowl.
5. Adhere the bowl positioning blocks into position against bowl with hot-melt.
6. Inspect the rim face of the bowl for any imperfections.
7. Clean the face rim and the areas to be glued with clear, denatured alcohol.
8. Mix Joint Adhesive and apply to bowl flange as shown.
9. Turn bowl over and position against stop blocks. Check for proper alignment.

Figure 15.3.B



10. Press bowl firmly in place. Look down through drain hole to check if there is squeeze-out around entire seam.

Figure 15.3.C

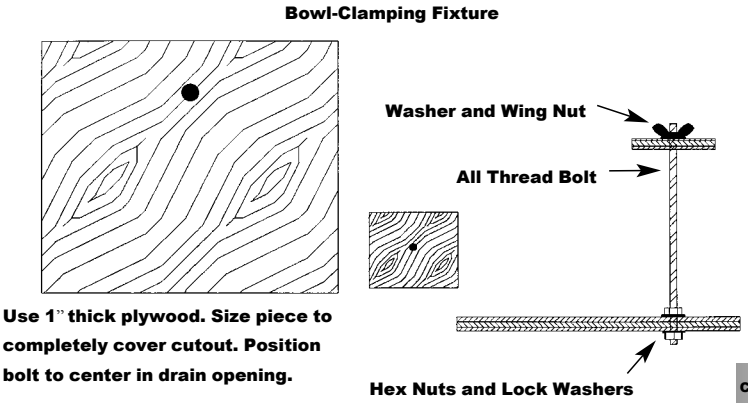
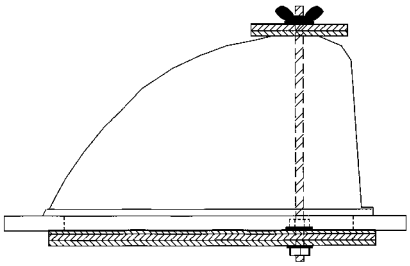

Bowl-Clamping Fixture
Washer and Wing Nut
All Thread Bolt
Use 1" thick plywood. Size piece to completely cover cutout. Position bolt to center in drain opening.
Hex Nuts and Lock Washers

Figure 15.3.D



11. Use bowl-clamping fixture (or similar device) to hold bowl until adhesive sets.
12. After adhesive sets, remove clamping fixture and turn bowl over.
13. Using a router equipped with a combination bit, rout excess sheet back to inside of bowl.
14. Sand and finish bowl and sheet in normal manner.

Helpful Hints:

Do not forget to check that the bowl is properly seated into the adhesive and that it is a good, tight fit.

If router bit used to trim sheet does not have a plastic bearing, protect bowl by applying a layer of masking tape where the bearing will ride.

If all the sheet is not removed, use an inflatable drum sander to remove excess.

15.4 READY-TO-INSTALL VANITY TOPS & BOWLS

Corian® One-Piece Vanity Tops & Bowls are ready to install directly from the carton. Only faucet holes as determined by the faucet set and sidesplashes, if needed, are to be installed on site. For full instructions, see Chapter 21.

16.1 TOOLS REQUIRED (OVEN DETAILS)

A proper oven is essential to conduct thermoforming.

The specification for a good thermoforming oven is fairly simple:

It has to be designed so that the entire sheet is heated to the same temperature at the same time.

Therefore, the oven must be able to fully enclose the sheet and heat Corian® **in a consistent and constant fashion.**

It has to have controls over the temperature that are accurate, repeatable and predictable.

It is quite possible to use small domestic ovens for doing small parts such as corners and buildup strips.

In addition to an oven, temperature-indicating labels (e.g., Celsistrips®) are required. Refer to the following checklist:

Calibration Checklist:

- thermocouple thermometer
- temperature-indicating labels
- stopwatch or wristwatch with second hand

Helpful Hints:

Do not use a heating process that does not provide constant heat to the whole of the sheet, such as a postformer or a heat gun.

16.2 MATERIAL PREPARATION

Proper material preparation is essential for successful thermoforming.

An essential part of successful thermoforming is the radius of the bend.

Refer to Table 16.2.A as a guide to the minimum inside radius permitted when thermoforming standard Corian® thickness sheet material:

Table 16.2.A

SHEET THICKNESS	MINIMUM INSIDE RADIUS
1/4" (6 mm)	1" (25 mm)
1/2" (13 mm)	3" (76 mm)
3/4" (19 mm)	5" (127 mm)

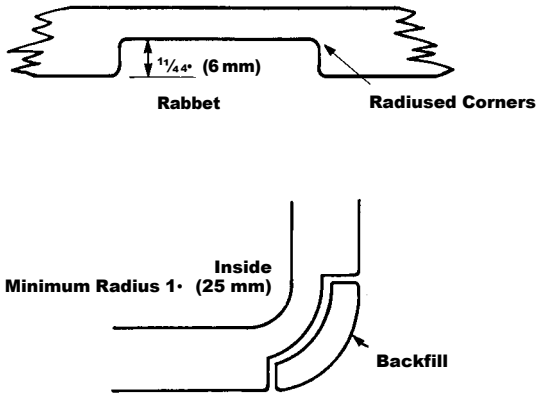
However, using the radius rabbet technique, we can reduce the radius below these recommended guidelines.

The technique requires a rabbet to be placed into the underside of the sheet adjacent to where the radius will be formed. This reduces the thickness of the sheet and thus allows a smaller radius to be formed.

The sheet is then thermoformed and, upon completion, backfill the rabbet section back to its original thickness.

Using 1/2" (13 mm) Corian® as an example, a rabbet is placed in the back of the sheet 1/4" (6 mm) deep and extending along the full depth of the curve.

Figure 16.2.B



This reduces the thickness of the sheet in the inside radius section from 1/2" (13 mm) to 1/4" (6 mm), and the radius can be reduced from 3" (76 mm) to 1" (25 mm).

STEPS TO COMPLETION:

Standard material preparation:

1. Cut all pieces to slightly over their required dimensions.
2. Sand all material to a smooth matte finish.
3. Remove any chips and scratches from edges.

Rabbeted radius technique:

1. Cut all pieces to slightly over their required dimensions.
2. Carefully calculate the area of each piece that requires the radius rabbet technique and measure and mark the rabbet on the sheet.

   Calculate the length of the curve by referring to the technique in Section 12.6 which calculated the circumference of the 90-degree curve: (2 x 3.14 x radius) ÷ 4.
3. Using a router and bit with rounded corners, rabbet the back.
4. Sand all material to a smooth matte finish.

5. Remove any chips and scratches from edges.
6. Thermoform sheet as per instructions.
7. After cooldown, prepare an inlay piece of Corian® to refill the rabbet.
8. Dam the ends of the rabbet and apply a generous quantity of Corian® Joint Adhesive to the rabbet, insert the inlay piece, clamp and allow to dry.
9. After Corian® Joint Adhesive has set, sand and complete to a matte finish.

Helpful Hints:

Be especially careful to ensure that all pieces are finished perfectly, free of any chips, deep scratches or any other imperfections.

16.3 OVEN PREPARATION

Correct oven preparation and calibration is the most crucial step in thermoforming.

Corian® should be heated to between 275°F (135°C) and 325°F (165°C) during bending. Lower temperatures may crack and whiten the Corian®.

Higher temperatures may blister, whiten or crack the Corian®. Colder or hotter material will be more brittle.

Heat-up times will vary depending on oven design and the size of the piece to be formed. Determine heat-up times for your oven by calibrating it.

Refer to Table 16.3.A as a guide to sample heat-up times:

Table 16.3.A

SHEET THICKNESS	OVEN TEMPERATURE	HEAT-UP TIME*
1/4" (6 mm)	300°F (149°C) 350°F (177°C)	30–60 min 15–30 min
1/2" (13 mm)	300°F (149°C) 350°F (177°C)	45–80 min 25–60 min
3/4" (19 mm)	300°F (149°C) 350°F (177°C)	75–105 min 50–85 min

* approximate time

Note:

Oven temperatures exceeding 400°F (205°C) may overheat the surface of the sheet before the inside of the sheet reaches thermoforming temperature. A maximum oven temperature of 400°F (205°C) is recommended. **Do not exceed this temperature.**

Before thermoforming commences, a test must be run to calibrate your oven to find the best time/temperature for thermoforming.

STEPS TO COMPLETION:

1. Drill a 1/32" (.79 mm) diameter hole halfway into a test piece of Corian®.
2. Insert the thermocouple wire in the hole, bend it to fit and tape it in place.
3. Insert the wire plug into the thermometer. Turn on the thermometer; the meter temperature should now show the temperature of the sample.
4. Apply a temperature-indicating label near the end of the wire.

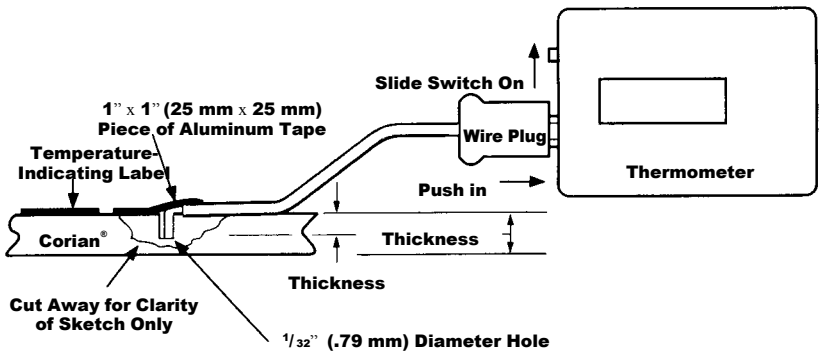


Figure 16.3.B

5. Turn the oven on and allow to preheat to 400°F (200°C) for 30 minutes.
6. Put the test sample in the oven and start the timer.
7. When the temperature on the thermometer reaches 295°–300°F (146°– 149°C), write down the timer reading and remove the piece from the oven.
8. Inspect the temperature-indicating label and note which dots turned black.

   If the strip blackened above 325°F (163°C), your oven is too hot.
9. Apply a new temperature-indicating label and rerun the test with a reduced oven temperature until the strip doesn't blacken above the 325°F (163°C) dot.
10. When 295°–300°F (146°–149°C) is reached on the thermometer without exceeding 325°F (163°C) on the temperature-indicating label, record the heating time.

    This will be the most effective time/temperature for your oven.
11. Remove the piece from the oven and allow the piece to cool until the thermometer reads 180°F (82°C).

    Note the timer reading. This is how long each piece should be cooled in the mold. This allows for proper cooling, even in a warm mold.

16.4 MOLD PREPARATION

Accurate molds should be prepared before commencing thermoforming.

Design Considerations:

1. Recommended mold materials are medium-density fiberboard (M.D.F.) and plywood.

   • low cost
   • isotropic

2. Male versus female mold

   • To reduce the risk of wrinkling when molding deep shapes, a male mold is preferable to a female mold.

   • If a piece is to have a surface texture imparted by the mold, the mold type is automatically determined by the convexity/concavity of the surface to be textured:

   – texture concave surface requires a male mold
   – texture convex surface requires a female mold

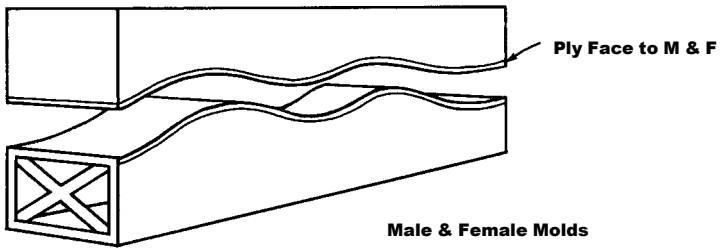


Figure 16.4.A

3. A deep and/or steep piece formed over a male mold will shrink around the mold as it cools and may stick to the mold. Incorporate a 5-degree (minimum) release angle into the mold.

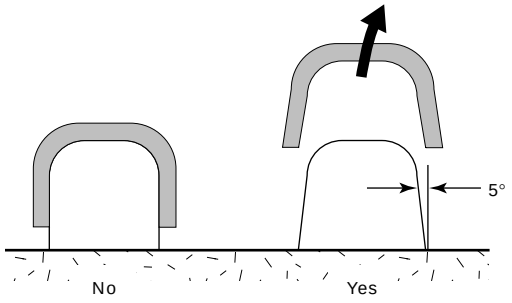
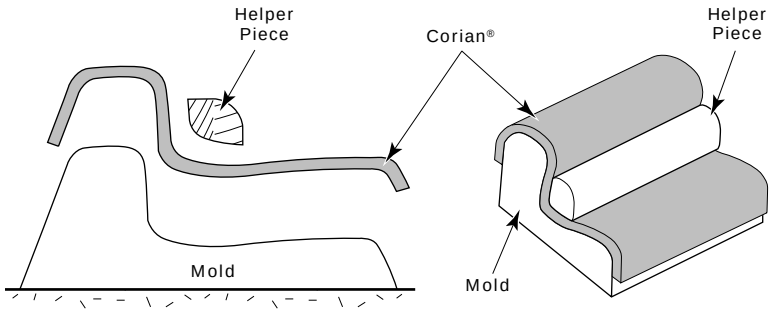


Figure 16.4.B

4. Use helper pieces in addition to the mold itself to:

   • do some initial shaping before vacuum membrane is activated
   • work with the vacuum membrane to help forming in difficult spots. For more information, see Section 16.6

Figure 16.4.C

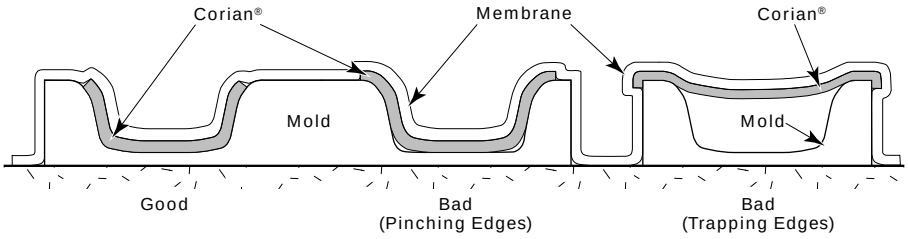


5. An option is to use a male mold in combination with a female mold.

   • advantage: positive control over material in mold.
   • disadvantage: more difficult to design initially and to change shape afterwards.

6. When using a female mold, bevel the cavity edges to prevent the material from being trapped between the forming membrane and the edge of the cavity. Make sure nothing inhibits smooth motion of the material as the membrane presses it into the cavity. This will allow the material to move fully into the mold. Above all, do not let the material get caught over a sharp edge.

Figure 16.4.D



7. Colored grades of Corian® turn white when stretched too far or too fast. If whitening is a problem, your options are to:

   • reduce curvature (increase radius) of the shape
   • slow the forming rate
   • use thinner material

8. Wrinkling most often occurs when material is compressed more than 10%. Reduce wrinkling by adjusting mold design and perform shape. **Under no circumstances should material undergo more than +/–25% strain.** Examine the formed piece to see what material will be cut away for the ultimate use, and cut away that material before you form the piece.

9. Making compound curves is the most difficult part of thermoforming. It helps if the design shape is symmetrical. Remember, maximum allowable stretch or compression is 25% (maximum stretch is reduced to 10–15% if whitening needs to be avoided).

STEPS FOR COMPLETION:

1. Using a jigsaw or router, cut the male and female shape in a good-quality plywood or M.D.F. board. A good-quality mold is essential, as any defect within the mold will be transferred into the face of the Corian® to be thermoformed.
2. Be sure that the internal supports of the male and female parts are close enough so that the mold is rigid when pressure is applied.
3. Face the male and female parts with 1/8" (3 mm) plywood or M.D.F. board, ensuring a perfectly smooth face.
4. Ensure that the male and female parts fit together neatly, allowing a gap sufficient for the thickness of Corian® that is to be thermoformed.

Helpful Hints:

Do not use metal or thick, solid wood on the mold faces, as these retain and absorb heat and slow the thermoforming and cooling process.

16.5 THERMOFORMING WITH STANDARD OVEN AND CLAMPING SYSTEM

STEPS TO COMPLETION:

1. Calibrate the oven with a sample piece, as per instructions in Section 16.3.
2. When you are confident of the scale of time/temperature, preheat the oven to the desired temperature.
3. Place the piece(s) of Corian® in the oven and start the timer.
4. At the expiration of the specified calibrated time, remove the piece(s) from the oven using hand- and arm-protective gloves.
5. Place the piece(s) in the mold(s) and clamp securely.
6. Reset the timer and wait until the calibrated cool-down time is expired.
7. Remove the piece(s) from the mold(s) with hand- and arm-protective gloves, allow to cool to room temperature then fabricate as required.

Helpful Hints:

Heat the entire piece. Spot-heating may cause problems; therefore it is important to heat the sheet uniformly.

Never attempt to thermoform a piece of Corian® that has a seam in it.

16.6 THERMOFORMING WITH HEATED PLATEN AND VACUUM MEMBRANE PRESS

A platen press, when used for thermoforming, will heat sheets much more quickly than an oven. This results in higher productivity. The platen press must be an electrical heating system capable of up to 400°F (200°C) or more. Alternatively, an oil-and-water heating system can be used.

Place the Corian® sheet into the preheated plate press with the heat setting between 300° and 325°F (150° and 160°C).

Adjust the press pressure to zero and lower the plates onto the Corian®.

Because the heat is applied directly to the surface of the Corian® sheet, the exposure time in the press will be reduced greatly from that of an oven. Normally, exposure of 10 to 15 minutes is sufficient in this mode.

DuPont recommends trial pieces of Corian® to determine exposure time.

DuPont recommends standard platen presses for door or laminating work

These guidelines are based on experience in thermoforming sheets of Corian®, 1/4" to 1/2" (6 mm to 13 mm) thick, in a vacuum membrane press.

Tools Required:

1. Clamps, etc., for two-part mold
2. "Laser sight" or equivalent infrared temperature measurement device for checking material temperature (indirectly, by measuring surface temperature of membrane)
3. Template material (can be cardboard for research and development works, but should be tempered hardboard or similar material for production)
4. Saber saw (orbital motion saber saw recommended for fast cutting speed)
5. Forming equipment:
   - heated platen press
   - vacuum membrane forming press
     – alternates: low-pressure press or hand clamps
   - molds (male, female or both) of medium-density fiberboard (M.D.F.) or wood

STEPS TO COMPLETION:

1. Forming Process

a. Preheat temperature of material to be formed: 320°F, ±20° (160°C, ±10°).

b. Heat-up time:

- **in heated platen press:** ±1.5 minute per 1/16" (1.5 mm) (for example, 6 minutes for a piece of Corian® 1/4" (6 mm) thick

c. Mold temperature: Starting from initial room temperature and going up to 120°F (50°C) after several pieces have been formed.

Note:

The first piece of the day will cool and set more quickly than subsequent pieces. Wrinkling is easier to correct with a warmed-up mold.

d. Forming pressure: Ambient to 15 PSI (1 atm), maximum with vacuum membrane—

- No need for high pressure.
- Once the forming temperature is exceeded, moderate pressure is sufficient for forming.
- Below forming temperature, the material will rupture (break) rather than deform.

2. Forming Aids

a. To allow Corian® to slide into a female mold cavity, lubricate the surface with a light layer of talc (no lumps). This also helps the piece release from a male mold.

b. Insulated gloves must be used.

c. Use auxiliary forming pieces (for example, dowels) to concentrate membrane force. Placing the piece prior to deploying the membrane will "pre-tuck" the sheet into the mold.

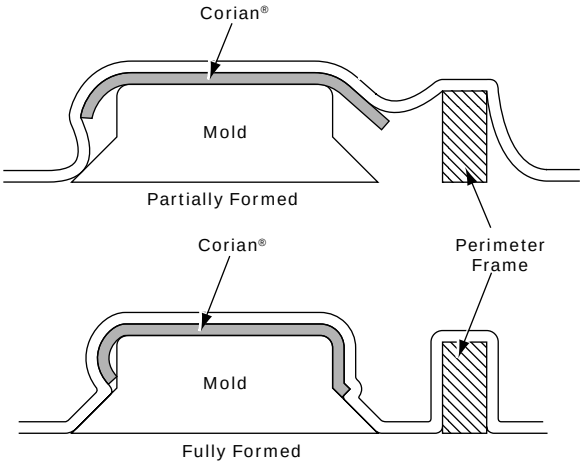
d. Perimeter frame is a technique to relieve forces on the edges of the formed material. Properly placed perimeter frame will cause the membrane to droop catenary-style over the material rather than "break" over its edges.

3. Forming Techniques

a. Drawing/stretching rate will influence whitening tendency—slower is better.

b. Keep material constrained until it cools to 180°F (82°C) measured at membrane surface, then release it to reduce stress.

Figure 16.6.A



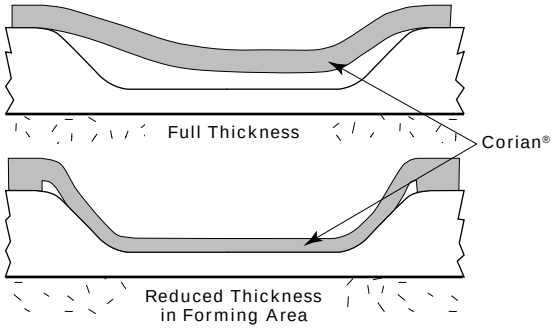
c. The thinner the material, the smaller the radius to which it can be bent and still avoid whitening.

d. Generally, thinner material thermoforms better than thick. If a thick piece is required, try reducing its thickness by machining in critical areas to improve thermoforming performance (e.g., change tray).

e. To avoid wrinkling, constrain material first where it is most likely to wrinkle. The usual method is to apply hand pressure on the forming membrane at the spot in question. This approach works best with a warm mold. **Warning:** Wear insulated gloves.

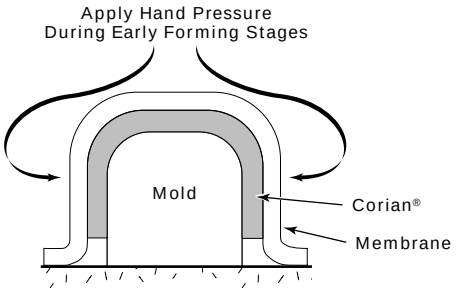
f. For best results, the piece should be cut slightly larger than its final outline before it is shaped. Determining ideal preform shape is a trial-and-error process. Make templates (or save the cutout holes in parent material) and

Figure 16.6.B



number your trials—**both** the template/cutout **and** the formed piece—so you learn what works.

Figure 16.6.C



Index of problems and solutions

Figure 16.6.D

SOLUTION SECTION		PROBLEMS				
		Wrinkling	Whitening	Failure to Release	Not Conforming to Mold Shape	Safety
Mold Design	16.4	2, 8	7	3		
Process	16.6.1		—	—	—	a, b, c, d
Aids	16.6.2	—	—	a	a, c, d	b
Technique	16.6.3	e	a, c	—	b, d, f	—

Note:
The DuPont product warranty is limited to the products made by DuPont (i.e., its range of sheets, shapes and accessories). The installed warranty is limited to installations done by DuPont Certified Fabricators and in accordance with the technical stipulations mentioned in the technical literature.

DuPont warrants the Corian® sheet in sheet-like applications. Three-dimensional thermoformed shapes (e.g., shower pan, bowl, etc.) made with Corian® and resulting from an additional production process on the Corian® sheet/shape is the responsibility of the fabricator/installer.

17.1

WALL PREPARATION

An essential element of any vertical application is that the Corian® sheet must conform to the dimensions and angles of the existing wall.

Ideal supports for dry vertical adhesion are:

- sound, dry gypsum board
- moisture-resistant plywood
- M.D.F. board
- any sound tile surface
- tile backer board
- sound plaster

Ideal supports for wet applications are:

- moisture resistant gypsum board
- tile backer board
- marine grade plywood
- clean, sound, dry tile surface

STEPS TO COMPLETION:

1. Check that the supporting surface is dry and sound (no moisture is to seep through the wall).

   If moisture is evident, find and cure the cause of dampness.

2. Check that the walls are above grade, that is, not below ground level with dirt banked on the outside (thus allowing moisture to seep through).

   If this is evident, Corian® is not recommended for use.

3. Ensure that water or moisture cannot seep behind vertical face paneling, by leaving a 1/2" (13 mm) gap between wall material and horizontal surface.

4. Remove from surface any dust, grease, loose grit, loose tiles or any other obstructions that may prevent Corian® from evenly adhering to it.

5. Thoroughly clean the wall with clear, denatured alcohol.

Helpful Hints:

If you are covering old tiles, remove any loose tiles and fill the gaps with broken tile and tile adhesive, then clean the old tiles with clear, denatured alcohol.

Caution:

Use of Corian® in saunas, swimming pools, steam rooms or below grade is not covered under the DuPont 10 year limited residential warranty. Corian® material used in these applications will warp or crack.

17.2 SCRIBING

Because walls tend to be out of square and not plumb, it may be necessary to scribe the wall panels to the wall.

STEPS TO COMPLETION:

1. Trial-fit all Corian® sheets and mark sheets for any required scribing and cutouts.
2. Using a belt sander or a router, cut the Corian® sheet back to the line.

Helpful Hints:

Do not attempt to fit any vertical sheeting until a proper scribing job has been done.

Do not attempt to fit any scribed sheet without the edge smoothed free of sharpness, chips and scratches.

In some installations, scribing can be eliminated by covering the seam with trim pieces. This can be a good effect in some installations and minimizes time on site.

17.3 SEAMING

There are two types of seams for vertical applications:

Caulked "V" Seam

The caulked "V" seam uses color-matched silicone, and the face edges are chamfered to form a small "V" as illustrated in Figure 17.3.A.

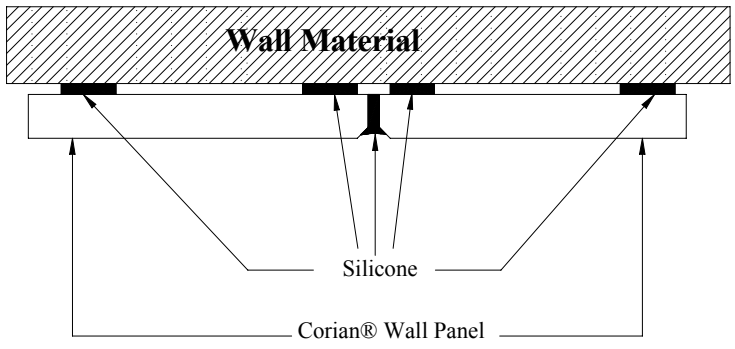


Figure 17.3.A

This seam is easy to fabricate and install; however, it may not be as aesthetically pleasing as a Corian® Joint Adhesive butt seam.

Joint adhesive may be used to build large solid walls of Corian. Be sure to allow proper spacing for expansion and contraction. The overall length depends on the expected temperature change. See Chapter 26 for expansion calculation.

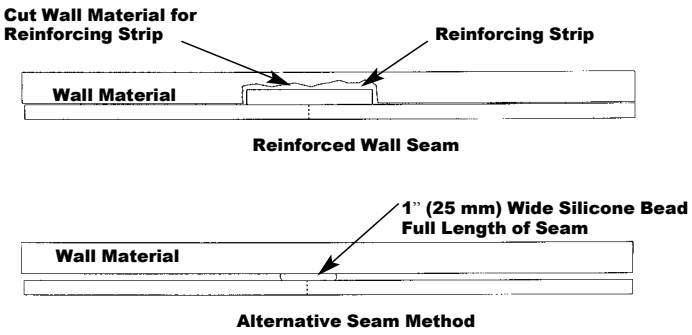
STEPS TO COMPLETION:

1. Trial-fit and scribe the sheets to be seamed.
2. Using a router, create a $^{1}/_{16}$" (1.5 mm) chamfered edge of 45 degrees on both faces that are to be seamed.
3. Adhere to vertical surface as per instructions, and partially fill the seam with color-matched silicone.
4. Clean excess silicone using a rag and denatured alcohol.

Standard Seamed Corian® Joint Adhesive Seam

The standard seamed Corian® Joint Adhesive seam can be used in vertical applications on large faces to create large, one-piece sections.

Figure 17.3.B


Cut Wall Material for Reinforcing Strip
Reinforcing Strip
Wall Material
Reinforced Wall Seam
1" (25 mm) Wide Silicone Bead Full Length of Seam
Wall Material
Alternative Seam Method

To achieve an acceptable vertical seam, note that if using full Corian® sheets, it is not possible to seam sheet to sheet directly from the pallet, as the Corian® sheet will not be straight enough to achieve an acceptable glue line.

Always size and mirror-cut sheets to be seamed together, and always reinforce the seam with a second piece of Corian® with the same thickness as the sheet being used.

STEPS TO COMPLETION:

1. Trial-fit and scribe the sheets to be seamed.
2. Seam the sheets using Corian® Joint Adhesive on the horizontal plane as per standard seaming procedures.
3. Allow Corian® Joint Adhesive to set, and clean smooth both sides of the seam.

   It is important to clean up the rear side of the seam to prevent potential stresses when butted against the wall on the vertical plane.
4. Once seam is complete, glue in place as per instructions.

Helpful Hints:

Follow all standard recommendations for seaming Corian®.

When using Corian® that is Venaro, be sure to explain to customers before installation the unique pattern and its effect on color-match in the seams.

Face-applied accessories must allow for expansion and contraction.

Drill all holes for accessories 1/8" (3 mm) larger than the mounting screw to be used; don't overtighten.

To help with alignment, rout edge of sheets with tongue & groove cutters or a wavy edge seam bit.

Note:
Do not use joint adhesive in an inside corner to seam two wall panels together. This limits expansion and contraction and can cause failures.

17.4 ADHERING CORIAN® TO SURFACES

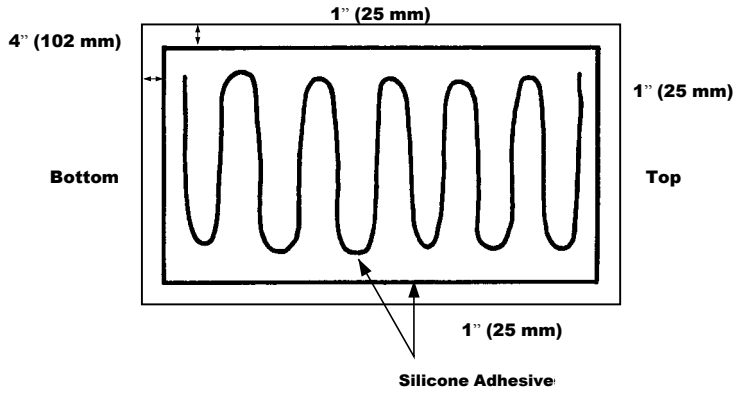
Once all the parts are scribed and seamed, the critical stage of glueing the Corian® to the wall begins.

Use silicone or neoprene panel adhesive to glue Corian® to the wall.

STEPS TO COMPLETION:

1. Clean all dust and grease off the walls to be covered.
2. Lay the Corian® parts facedown and remove any dust, grease, pencil marks and labels.
3. Using silicone or neoprene panel adhesive, make a large "S" pattern on the back of the sheet, and a perimeter bead about 1" (25 mm) from the edges of the sheet and about 4" (100 mm) from the bottom.

Figure 17.4.A



4. Within two minutes, place panel in position and press firmly against wall to spread adhesive.

Note:
Some panel adhesives require "venting." Carefully read and follow instructions on tube.
Do not write words, names or dates on wall or panel as they may show through.

5. Pull back top of panel and apply a dab of hot-melt adhesive to each corner against wall.
6. Push the Corian® back against the wall and bump into position with shoulder or heel of hand.
7. Repeat this procedure for all parts.
8. Caulk all seams with color-matched silicone. Use clear, denatured alcohol and a clean, white cloth to remove the excess silicone.

Helpful Hints:

When working with 1/4" (6 mm) Corian®, especially in large sheets as is usual for vertical applications, be especially careful with handling.

Glazers' suction cups are helpful for handling large sheets.

17.5 BASEBOARDS

Corian® can be used effectively as a baseboard because of its workability and durability.

Note:
Do not install an inappropriate thickness of Corian® for the impact to which the vertical application is to be subjected.

STEPS TO COMPLETION:

1. Precut and finish the routed Corian® being used.
2. Make any returns, inside or outside corners as needed.
3. When you are satisfied that all parts are cut and fitted correctly, glue the pieces to the wall after first removing any loose cement or dust on the surface.
4. The recommended adhesive is silicone or neoprene-based panel adhesive. Apply according to manufacturer's instructions.

Helpful Hints:

If the walls are curved, the Corian® can be thermoformed to fit to the wall. A site pattern should be made.

17.6 CORIAN® TUB & SHOWER SURROUND KITS

This section contains important information to enable you to install your Corian® Tub & Shower Surround Kits.

Please carefully follow all the components information and installation instructions.

Note:
Please refer to Corian® Product Catalogs for proper size of kits.

17.6.1 KIT COMPONENTS

3-Wall Tub Surround

Each tub surround kit contains:

2 back wall panels (A)
2 side wall panels with curved corner edges (B)
1 soap shelf (C)
1 shampoo shelf (D)
2 sponge corner inserts
1 tube color-matched sealant for DuPont Corian®
1 adhesive for installing soap/shampoo shelves
1 installation guide
1 installation video
1 packet of cardboard shims
1 Corian® warranty folder

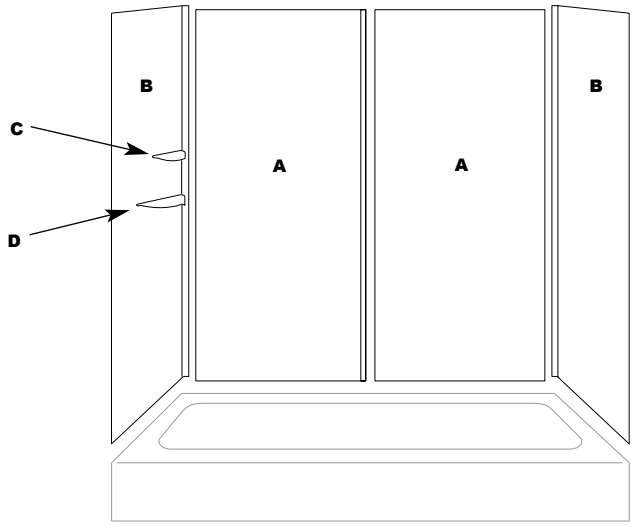


Figure 17.6.1.A

3-Wall Shower Surround

Each 3-wall shower surround kit contains:

1 back wall panel* (A)
2 side wall panels with curved corner edges (B)
1 soap shelf (C)
1 shampoo shelf (D)
2 sponge corner inserts
1 tube color-matched sealant for DuPont Corian®
1 adhesive for installing soap/shampoo shelves
1 installation guide
1 installation video
1 packet of cardboard shims
1 Corian® warranty folder

*36” x 60” kits contain 2 back wall panels

Note:

For a 60” wide, 3-wall shower surround kit, follow the installation instructions for the 3-wall tub surround kit.

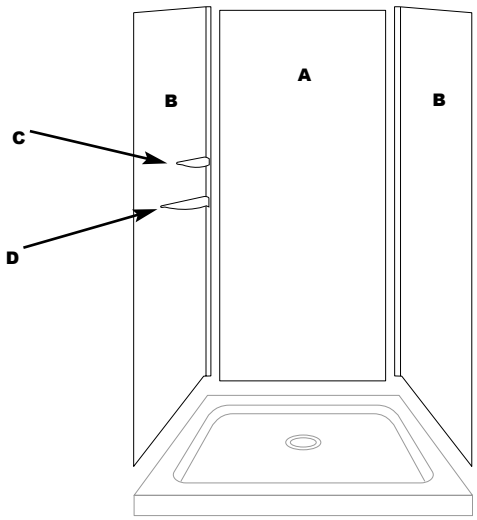


Figure 17.6.1.B

2-Wall Shower Surround

Each 2-wall shower surround kit contains:

1 wall panel with flat corner edge (A)
1 wall panel with curved corner edge (B)
1 soap shelf (C)
1 shampoo shelf (D)
1 sponge corner insert
1 tube color-matched sealant for DuPont Corian®
1 adhesive for installing soap/shampoo shelves
1 installation guide
1 installation video
1 packet of cardboard shims
1 Corian® warranty folder

Note:

The way you install a two-wall corner shower kit may vary, depending on the bathroom layout and the dimensions of the shower base. In this example, we describe installation over a square, neo-angle shower base with the flat-edge panel on the wall with the plumbing cutouts and the curved-edge panel on the blank wall (see Figure 17.6.1.C).

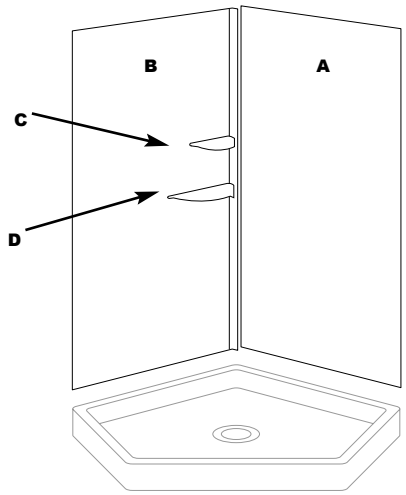


Figure 17.6.1.C

17.6.2

TOOLS & SUPPLIES REQUIRED

Tools and Supplies Required:

- tape measure
- level
- straightedge (60” or longer)
- carpenter’s square
- belt sander (you can use other types of sanders, but a belt sander makes the job go faster)
- 120-grit sandpaper (for both your belt sander and hand-sanding)
- compass
- pencil
- masking tape
- utility knife
- glue gun and hot-melt glue
- caulking gun
- panel adhesive (light tan-color, neoprene-based—one tube for each panel you’re installing)
- denatured alcohol
- clean, lint-free, white cloths (paper towels or colored cloths may leave behind lint or colored fibers that will spoil the appearance of your sealant or Joint Adhesive)
- safety glasses or protective goggles
- hearing protection
- dust mask
- shop vac
- sheets of clear poly film (tape over doorways to contain dust)
- two sawhorses with 2 x 4 rails

To cut plumbing access holes:

- router with straight-cut, carbide-tipped bit **or** power drill with hole-cutter bit or spade bit. **Do not use auger bit.**

17.6.3

PREPARATION

After gathering necessary tools and supplies, inspect installation area. Be sure:

- Bathtub/shower is secured properly
- Plumbing is installed and tested
- Correct subsurface material is in place (read following subsurface information carefully)
- Bathtub/shower base is protected; pad bottom with a material such as carpeting

Note:

Follow all manufacturers’ instructions and safety information on panel adhesive, sealant, alcohol and epoxy containers. Ensure adequate ventilation before applying adhesives or caulking materials.

For installation over regular drywall, plywood or paneling*

Replace these subsurfaces with one of the following acceptable materials: moisture-resistant drywall, tile backer board or marine-grade plywood.

For installation on concrete block or masonry

Above grade: Stud out these walls with 2 x 4's and install a smooth, dry subsurface of moisture-resistant drywall.

Below or on grade: ***Never*** install Corian® directly on exterior or interior masonry, concrete, cinder block, or any other wall construction that is or may become damp. Even the use of studding and moisture-resistant drywall as a subsurface does not provide an effective moisture barrier.

For installation over ceramic tile*

Be sure tile is clean (no dust, mildew or soap scum), dry and sound.

Check for loose tiles and reattach as necessary.

If tile does not cover entire wall area that Corian® will cover, build up area without tile to provide uniform support.

If there are gaps in the subsurface, build out under the Corian® using either moisture-resistant drywall, tile backer board or marine-grade plywood.

Spread tan-colored panel adhesive over sharply contrasting color tiles. Alternatively, paint the tiles with oil-based paint.

Note:

Installation instructions are general in nature. More specific instructions are included in kits. Laminate shims ($^1/_{16}$" [1.5 mm] thick or material of equal thickness) are required on bathtub/shower deck to provide a caulking gap.

*Check for signs of moisture in or behind wall. If moisture is present, remove wall. Check for plumbing leaks, making repairs as necessary. Then, install a new subsurface. Any moisture retained in the subsurface can cause Corian® to warp or separate from the wall.

17.6.4
INSTALLATION

Installation:

1. Locate the cardboard shims in your carton.
2. Tape shims along the top ledge of the tub or shower base. See Figure 17.6.4.A.

   If panels are to be installed flush to ceiling, they must all be trimmed to size before you begin. See Special Instructions, "Trimming Panels That Go to Ceiling" (17.6.5).

Figure 17.6.4.A

3. Locate side panel for wall without plumbing.

   Check labels to make sure the panel is faceup and right-side-up.

4. Position panel against wall so that the curved edge is flush against the back wall. (You might ask a helper to hold the panel steady while you check the fit.)
5. Check the gap between wall panel and your tub at the bottom edge.

   If gap is no wider than $^1/_8$" (3 mm), proceed to step 6.

   If the gap is $^1/_8$" (3 mm) or wider at any point, you'll need to scribe the panel to the tub with your compass. See Figure 17.6.4.B. But don't trim it yet!

Figure 17.6.4.B

6. Check front edge of panel.

   If panel does not extend past the outer edge of tub, proceed to step 7.

   If panel extends past the outer edge of the tub, it must be trimmed. But this should not be done until scribing, trimming or cutting of plumbing access holes is complete. See Special Instructions, "Trimming Front Edge of Panels" (17.6.5).

7. Locate panel for wall with plumbing and matching cardboard template.

   Check labels to make sure the panel is faceup and right-side-up.

8. Measure and mark template.

   Measure the distance from the corner to the center of each plumbing pipe. See Figure 17.6.4.C. Write down your measurement.

Figure 17.6.4.C

   Measure the distance from the top of a shim on the tub ledge to the center of each pipe. See Figure 17.6.4.D.

Figure 17.6.4.D

   Write down your measurements.

   Repeat the procedure to double-check measurements.

   Transfer measurements to template.

   Measure the size of the holes required to adequately clear any stems or valves. These holes need to be big enough to allow future servicing of components, but smaller than the finished trim pieces of your fixtures. Double-check your measurements with the actual fixtures themselves.

   Mark holes on template with your compass.

9. Cut holes in template with a utility knife. Cut a little inside the lines to make holes a little smaller than you need. If you need to, you can enlarge them after you "test-fit" the template.

10. "Test-fit" template on the wall, making sure the template is flush

against the corner. Be sure it's faceup and right-side-up.

11. "Test-fit" fixtures with template in place. Adjust holes in template if necessary.

12. Cut holes in panel.

    Lay panel **facedown** on sawhorses and rails.

    Lay template **facedown** over panel. Make sure the top edge of the template corresponds with the top edge of the panel and that the bottom edges of the panel and the cardboard are flush.

    Align the edge of the template 1/4" (6 mm) beyond the curved edge of

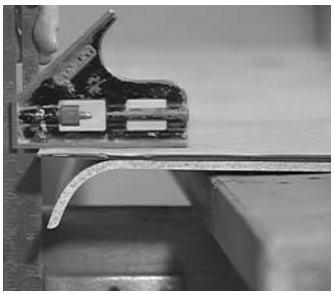


Figure 17.6.4.E

    the panel with your carpenter's square. See Figure 17.6.4.E. This is to compensate for the thickness of back wall panels.

    Trace holes from the template onto the panel.

    Put on eye protection, hearing protection and dust mask.

    Carefully cut out the holes with a router with a straight-cut, carbide-tipped bit (run counterclockwise), **or** with a power drill, with hole saw or spade bit. Provide support directly under the holes when using a power drill. It will get dusty, so you might want to do a quick cleanup with your shop vac after this step.

    Lightly sand edge of holes to prevent cutting your hands when handling.

13. "Trial-fit" the panel on the wall with the curved edge flush against the back wall and the bottom edge on the shims.

14. Check front edge of panel.

    If panel does not extend past the outer edge of tub, proceed to step 15.

    If panel extends past the outer edge of the tub, it must be trimmed. But this should not be done until any scribing or trimming of the bottom of the panels is complete. See Special Instructions, "Trimming Front Edge of Panels" (17.6.5).

15. Check the gap between the wall panel and your tub at the bottom edge.

If gap is no wider than 1/8" (3 mm), proceed to step 16.

If the gap is 1/8" (3 mm) or wider at any point, you'll need to scribe the panel to the tub with your compass. But don't trim it yet!

If you have to do any scribing of the side panels, you'll have to make some adjustments to your back panels, too.

a. Lay back wall panels **faceup** on your sawhorses, butted together. Use tape to hold them together with their bottom edges flush.

b. Measure the width of the panels and check it against the back wall measurement you recorded earlier. If the wall panels are too wide, measure and trim as necessary.

c. Locate left wall end panel. Measure the distance between the bottom edge of the panel and the scribed line. Write it down.

d. Measure up that same distance from the left bottom edge of the left back wall panel and mark the panel.

e. Locate your right wall side panel and again measure the distance between the bottom edge of the panel and the scribed line. Write it down.

f. Measure up that same distance from the right bottom edge of the right back wall panel and mark the panel.

g. Carefully draw straight lines on the wall panels from mark to mark.

To trim the panels you scribe…

a. Very carefully sand away the bottom edge of each panel with your belt sander until you meet the scribed lines.

b. "Trial-fit" the back panels against the wall with the bottom edges resting on the shims. The center seam edges of the panels should be perfectly parallel. If not, you may need to slightly retrim the bottom edges of one or both panels.

16. "Trial-fit" all the panels together to check the alignment of the tops of the panels. If there is more than 1/16" (1.5 mm) difference from one panel to another, you need to trim the tops of the panels. See Special Instructions, "Trimming Top Edges of Panels" (17.6.5).

17. Clean the backs of the panels and the walls with a clean, lint-free, white cloth moistened with denatured alcohol. If you made any pencil marks on the backs of the panels by mistake, be sure you completely remove them. If you don't, they may show through when you're finished.

18. Find the center of your back wall and make a reference mark.

19. Locate the back wall panel with the grooved seam edge. This is the panel you'll install first.
20. Lay panel **facedown** on sawhorses.
21. Apply panel adhesive in a solid bead all around the perimeter, about one

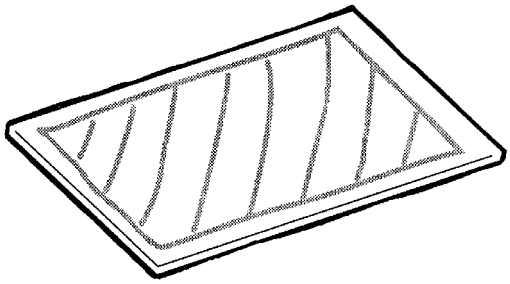


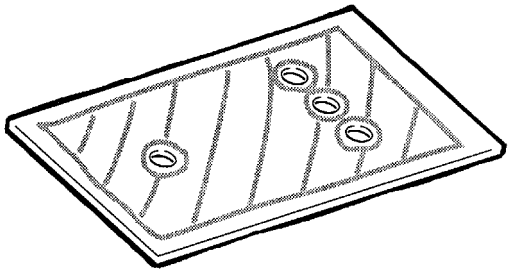
Figure 17.6.4.F

inch from the edges. Be sure that the bottom edge of your adhesive is higher than the vapor gap cutout on your wall. Then apply the adhesive in diagonal lines across the center of the sheet. See Figure 17.6.4.F. Don't scribble or draw pictures! They could show through!

22. Position the panel against the wall right-side-up and resting on shims. Line it up with the reference mark on the center of the wall and press it firmly into place. Ask your helper to hold it in place while you work with the other panels.
23. Apply color-matched silicone for DuPont Corian® in a smooth bead along the grooved edge.
24. Lay other back wall panel **facedown** on sawhorses.
25. Apply panel adhesive as you did with the first back panel.
26. Position panel against wall right side up and resting on shims. Press it into place, with the seam edges as snugly together as possible.
27. Slide back wall panels together—with you pushing from one outside edge and your helper pushing from the other, so that:
    - the center seam edges come together along their entire length
    - the panels are aligned on their top edges
    - the bottom edges are snug against the shims
    - and the entire assembly is centered on the back wall, left to right.
28. Slightly pull away top of the panels and vent if necessary. Follow the manufacturer's instructions on the adhesive tube.
29. Apply hot-melt glue to the wall under the outer top corners of the panels.
30. Press panel back into place and hold until the glue sets—15 seconds should be long enough.

31. Clean away the excess silicone from the center seam with a clean, lint-free, white cloth moistened with denatured alcohol.
32. Lay side panel with cutouts **facedown** on sawhorses.

Figure 17.6.4.G



33. Apply panel adhesive to side panel with cutouts in a solid bead all around the perimeter, about one inch from the edges. Be sure the bottom edge of your adhesive is higher than the vapor gap cutout on your wall. Then apply the adhesive in diagonal lines across the center of the sheet. See Figure 17.6.4.G. Don't scribble or draw pictures! They could show through!
34. Apply color-matched silicone for DuPont Corian® in a smooth bead along the entire length of the back edge of the curved corner.
35. Position panel against wall, right side up and resting on shims. Press into place with curved edge slightly away from the back wall panel.
36. Pull away the top of the panel slightly and vent if necessary. Follow the manufacturer's instructions on the adhesive tube.
37. Apply hot-melt glue to the wall under the outer top corners of the panel.
38. Press panel back into place so that the entire curved edge fits snugly against the back wall panel and hold until the glue sets—15 seconds should be long enough.
39. Inspect your work. If the gap between the curved corner is wider than $^{1}/_{16}$" (1.5 mm), loosen the panel, reapply hot-melt glue and try it again.
40. Clean away the excess silicone from the corner seam with a clean, lint-free, white cloth moistened with denatured alcohol.
41. Install side panel without cutouts by following steps 32–41.

Surface-Mounted Accessories

Note:

If using surface-mounted accessories, do ***not*** screw directly into Corian®. Screws must attach into the stud or supporting block.

1. Drill through Corian®. Holes should be 1/8" (3 mm) larger than diameter of accessory screw.
2. Insert silicone in hole before inserting screw. Do **not** overtighten.

Caulking

Note:
For best results, wait 8–10 hours before final caulking is applied. This allows adhesives to partially set. If caulking immediately, extreme care should be taken not to disturb trim pieces.

1. Carefully remove all shims.
2. Apply fine coved bead of color matched sealant in gap around bathtub/shower, around vertical edges and top of curved corners and trim, and around top and bottom edges of soap/shampoo shelves.

Note:
Use clear, denatured alcohol to remove excess sealant. Wait 24 hours before using bathtub/shower to allow time for sealant to fully cure.

17.6.5 SPECIAL INSTRUCTIONS

Use and Care

Please read the instructions in the Care and Maintenance Brochure.

Trimming Panels That Go to Ceiling

If you are installing panels flush with the ceiling, they must be trimmed to size as your first step in the installation process.

STEPS TO COMPLETION:

1. Be sure shims are taped in place along top of tub or shower base ledge. Use at least three shims for each panel to be installed, at points that correspond to the left, right and center of each panel.
2. At eye level, draw a continuous level horizontal line around the walls where panels will be installed.
3. Measure up from each shim to the level line. Double-check your measurements. Write them down. Making a simple diagram of the panels will be helpful.
4. Note the longest measurement and—on each panel—measure up that distance from the bottom and mark a point on each side in pencil. Use a straightedge to draw a horizontal line across each panel from mark to mark.
5. Transfer measurements to bottoms of panels by measuring down from the horizontal line on your panels. Follow your diagram and do one panel at a time.

6. Measure from the level line on your walls to the ceiling at several points along each wall that correspond to the locations of the shims below. Double-check your measurements and write them down on your diagram.
7. Transfer measurements to tops of panels by measuring up from the horizontal line on your panels. Follow your diagram and do one panel at a time.
8. Draw straight lines between each point that you've marked.
9. Lay a panel **faceup** on the sawhorses.
10. Put on eye protection, hearing protection and a dust mask.
11. If a small amount needs to be trimmed (1/4" [6 mm] or less), carefully sand down to each line with a belt sander.
12. If a larger amount needs to be trimmed (more than 1/4" [6 mm]), carefully cut the panel with a router, using a straight-cut, carbide-tipped bit. Hand-sand each routed edge until smooth to the touch.
13. Repeat the procedure for each panel.

Trimming Front Edge of Panels

If the front edge of the side panels extend beyond the front edge of the tub or shower base, they can be trimmed after any required scribing, trimming or cutting of plumbing access holes is complete.

Additional tools required:

- a router guide somewhat longer than the height of the panel
- C-clamps with cushioned tips
- a 1/4" (6 mm) carbide-tipped, roundover router bit (if you want to restore the original radius edge)

Procedure:

1. Place panel in its final position. Hold firmly in place with masking tape or ask a helper to hold it in place.
2. Mark the bottom of the panel.
3. Using a level, draw a plumb vertical line from the bottom of the panel to the top.
4. Place panel faceup on the sawhorses and clamp it in place.
5. Firmly clamp the router guide to the sheet.
6. Put on eye protection, hearing protection and dust mask.
7. To restore the original radius edge of the panel, carefully cut the panel with the router, using a 1/4" (6 mm) radius, single-flute, carbide-tipped bit.

If the front edge of the panel will be covered with trim, cut with a straight-cut, carbide-tipped blade.

8. Sand panel to remove router marks.

Trimming Top Edges of Panels

If there is more than $^{1}/_{16}$" (1.5 mm) difference in the height between the tops of the panels, you need to trim the panels.

Figure 17.6.5.A

Procedure:

1. "Trial-fit" all panels together. Either tape them into their final position or ask a helper or two to hold them for you.
2. Find the lowest point. From there, draw a level horizontal line all around the

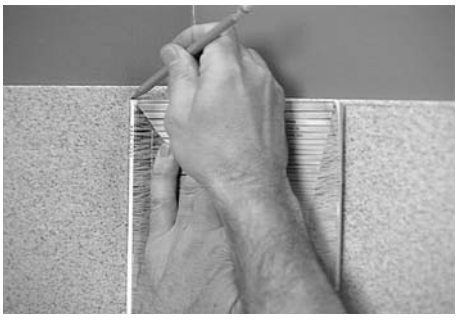


Figure 17.6.5.B

top. See Figure 17.6.5.A.

3. When you get to the curved corner, here's an easy way to continue drawing your level line:

   Line up the top of a magazine with the line you drew. Press the magazine evenly against the curved corner and draw your line along the top. See

Figure 17.6.5.B. This works like a flexible straightedge!

4. Continue drawing your horizontal level line around the tops of the other panels.
5. Carefully sand the top edge of each panel with your belt sander, down to the line you drew.

Installing Optional Wall Trim

Additional tools required:

- For straight cuts: miter box or fine-toothed hand saw
- For curved cuts: saber saw with a fine-toothed blade

Procedure:

1. Scribe a vertical line on the wall to mark the position of the outer edge of the trim.
2. Measure and cut to length just as you would with wood trim.

   For straight cuts, mark and cut with miter box or fine-toothed hand saw.

   For curved cuts, scribe the curve and carefully cut with a saber saw with a fine-toothed blade.
3. Sand cut edges smooth.
4. Apply beads of silicone.
5. Apply a few dabs of hot-melt glue toward the center of trim.
6. Press into place against scribed vertical line until glue sets.
7. Clean away excess silicone with a clean, lint-free, white cloth moistened with denatured alcohol.

18.1 TOOLS REQUIRED

Finishing Corian® is a critical part of the end consumer's perception of your ability to fabricate Corian®.

Tools required for effective finishing include:

1. random orbital sander
2. microfinishing disks 100, 60, 30, 15
3. Scotch-Brite® pads (maroon and gray)
4. P grade sandpaper such as 120- 180- and 220-grit may be used as an alternative

To effectively check for a uniform finish during sanding, install low-angle lighting behind the work station.

Helpful Hints:
Plan for control of dust at the installation site.
Several sanders are equipped for dust control that should be used on-site.
Several brands of large and/or multiple head sanders are available. They make sanding easier, faster and can help to keep the surfaces flat

18.2 MATTE FINISH

The vast majority of countertops should be finished in a matte finish to provide easy maintenance.

STEPS TO COMPLETION:

If surface is free from scratches or defects caused during transportation, handling or fabrication, start with step 4.

1. Load the sander with a 100-micron abrasive disk.
2. Sand the entire top to a uniform finish. Be sure to overlap sanding strokes by at least 1/2 the pad diameter and cover the entire surface. See Fig. 18.2.A Care must be taken not to concentrate too heavily over the seam area, as this may develop a different look in this area (particularly with particled colors).

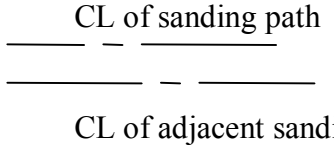
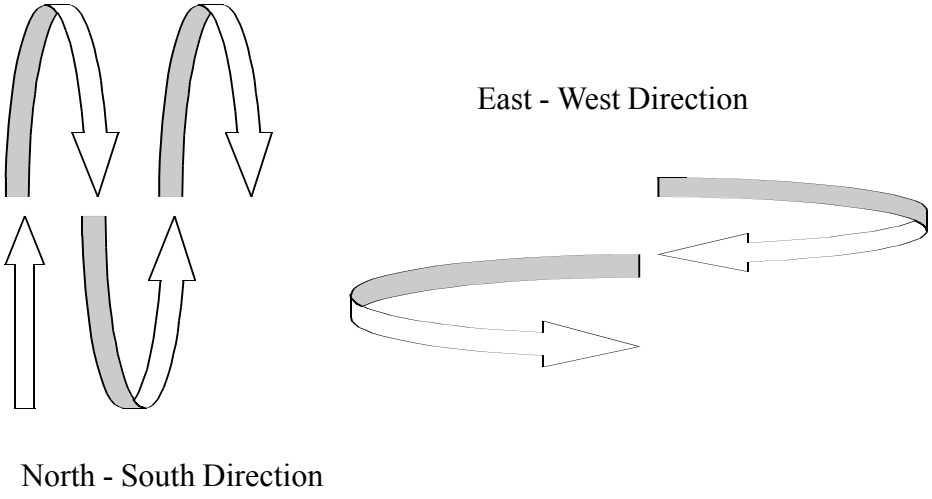


Figure 18.2.A

3. When this is finished, wipe the top and inspect for leftover scratches and uniform finish.
4. Re-sand the top as in Step 2 with a 60-micron disk and repeat the cleanup procedure. Inspect top once again.
5. Wipe the top down with a wet cloth, then buff with a maroon Scotch-Brite® pad. This will give an attractive matte finish.
6. As an alternative, use 120-grit paper to remove scratches or defects caused during transportation, handling or fabrication, followed by 180-grit paper, then 220-grit followed by maroon Scotch-Brite®. Always sand "North - South, East - West" See Figure 18.2.B

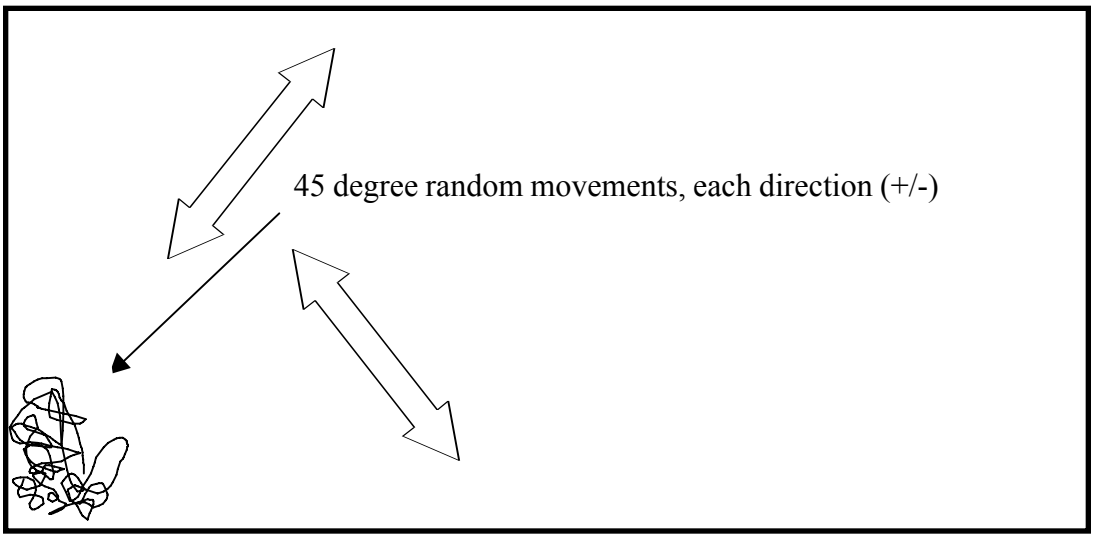
Figure 18.2.B



Helpful Hints:
Mask off the work area if site dust control is crucial by using sheet plastic. The finishing process creates excessive dust that can lead to long cleanup time and dissatisfied customers.
Never use alcohol to clean dust from the surface. Alcohol leaves a film that requires repeating several steps to remove.

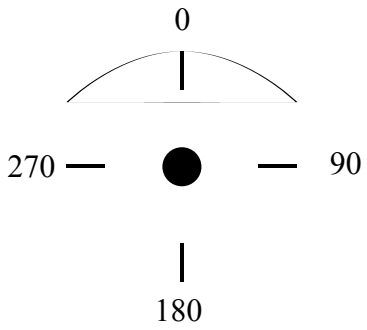
Many installations will have quite a bit of ambient light falling on the countertops. This exteme lighting condition will highlight any seaming imperfection in the finish, including the pattern left by the sander. To minimize these patterns, after every sanding step produce very random motions such as circles and figure-eights as shown in Figure 18.2.C. These motions are conducted at a 45 degree angle and will criss-cross for every level of abrasive used. Only two passes are usually required. One pass at + 45 degrees and one pass at - 45 degrees. See Figure 18.2.C

Figure 18.2.C



Random orbital sanders lose their effectiveness if too much pressure is applied and the pads stops spinning. To assure that the pad is spinning, mark each sanding pad with four black lines at 0, 90, 180, and 270 degrees See Figure 18.2.D These marks will point out if even pressure is applied during sanding. If adequate pressure is applied during sanding , the pad markings will spin freely with a relative blur or "strobe effect". If too much pressure is applied, the "strobe effect" will stop spinning thus, not allow the pad and paper to perform as designed.

Figure 18.2.D



18.3 SEMIGLOSS FINISH

1. Complete steps 1–4 from Section 18.2, which describes how to create a matte finish for Corian®. Do not use the maroon Scotch-Brite® pad.
2. Re-sand with a 30-micron disk.
3. Wipe top clean with a damp cloth.
4. Buff entire top with a gray Scotch-Brite® pad until uniform semigloss appearance is achieved.

18.4 GLOSS FINISH

A gloss finish in the appropriate end-use application is probably the most aesthetically pleasing finish for Corian®.

However, this type of finish is more sensitive and requires constant care and attention to maintain its look. Do not install a countertop with a high-gloss finish in a high-traffic/high-use area, such as a kitchen. If requested to do so, you should clearly advise the consumer of the special care needed, to prevent unrealistic expectations.

STEPS TO COMPLETION:

1. Complete the steps from Section 18.3, which describes how to create a semigloss finish for Corian®, but do not use Scotch-Brite®.
2. Re-sand the top with a 15-micron disk. Change disks often, as finer grits tend to clog quickly. Repeat cleanup step.
3. Using a low-speed polisher and compounding pad, apply an automotive rubbing compound. Do small areas, overlapping to ensure a uniform appearance.
4. If desired, repeat step 3, using a white car polishing compound.
5. Be sure to wash away any residual polishing compounds.

Note:
Any polishing compounds must be washed away thoroughly, as they are not food-safe.

An alternative method of bringing the top to a high-gloss finish is:
High-gloss finishes can also be obtained using successively finer grits of abrasive, such as wet or dry sandpaper or "MicroMesh" sanding abrasives by "MicroSurfaces." Follow manufacturers' instructions to obtain the desired gloss level.

18.5 TRIZACT™

A high gloss can also be achieved by using Trizact™ film abrasives. In order to be effective, Trizact™ films must be used wet. Due to the possibility of electrical hazards when using water with electric power tools, DuPont highly recommends against wet-sanding with electric powered sanders. Wet-sanding is only to be done with air powered tools.

Note:
Do not wet-sand using plug-in electric sanders. This presents an electrocution hazard.

Scotch-Brite® is a trademark of 3M Company, USA.

Tool Requirements:

• air-powered random orbital sander
• 100-micron abrasive film
• Trizact™ films: A35, A10, A5, 568XA
• water and spray bottle to "mist" surface

To sand most effectively, use "pattern sanding." This involves sanding side to side, overlapping each successive pass by about one-third of the pad. When complete, sand front to back, also overlapping each pass by about one-third of the pad. Repeat this process before changing to the next finer abrasive film.

STEPS TO COMPLETION:

1. Remove surface blemishes, fabrication scratches, etc., using the 100-micron film abrasive on an orbital sander. This step is done dry. Wipe surface of the countertop completely clean and inspect for defects and scratches. Re-sand if needed. Clean surface again and reinspect. Clean entire top before proceeding.
2. Install the A35 Trizact™ film abrasive on an air-powered random orbital sander. Use spray bottle to lightly mist surface. Pattern sand process the entire countertop as described above. **Note:** It is imperative to keep the surface misted during the entire sanding process. The Trizact™ abrasives are only effective when used wet. Be sure to sand the countertop twice. Wipe the surface clean and inspect for defects and scratches. Re-sand if needed. Clean entire surface clean before proceeding.
3. Install the A10 Trizact™ film abrasive on the air-powered random orbital sander. Use spray bottle to lightly mist surface. Repeat the pattern sanding process on the entire countertop. Be sure to sand the countertop twice. Clean entire countertop and inspect for defects and scratches. Re-sand if needed. Clean entire top before proceeding.
4. Install the A5 Trizact™ film abrasive on the air-powered random orbital sander. Use spray bottle to lightly mist surface. Repeat the pattern sanding process on the entire countertop. Be sure to sand the countertop twice. Clean entire countertop and inspect for defects and scratches. Re-sand if needed. Clean entire top before proceeding.
5. Install the 568AX Trizact™ film abrasive on the air-powered random orbital sander. Use spray bottle to lightly mist surface. Repeat the pattern sanding process on the entire countertop. Be sure to sand the countertop twice. Clean entire countertop and inspect for defects and scratches. Re-sand

if needed. Use clean water to clean off all mist and sanding residue from countertop. Wipe top dry and inspect. If any defects, splotches or scratches are present, go back to the preceding step and re-sand top. If scratches persist, keep going back to the step needed to remove the scratch or get rid of the splotches.

Helpful Hints:
When cleaning the surface between sanding steps, do not use a spray bottle to wet the surface. It's best to use a bucket of water. Change the water when it looks milky.
A squeegee works very well to begin cleaning the surface when using Trizact™ abrasives and water. Wipe the squeegee clean after each pass.

18.6 DIFFICULT FINISHES

Obtaining high quality, uniformly sanded finishes on dark colors of Corian® can be challenging at times. In addition, imperfections in the sheet finish can mask flaws in darker colors. This is most serious when adding a semi-gloss or high gloss finish. A new sanding procedure has been identified to obtain consistant finishes on darker colors of Corian®. The system employs new technology developed by sia Abrasives USA, Inc. Using the sia system and the sanding techniques outlined earlier in this chapter, consistant finishes on darker colors of Corian® are more easily obtained.

Tool requirements:

· GEM Industries 11" random orbital sander with vacuum shroud and dust removal system
· sia Abrasives USA Inc, sanding materials:
  11 $^{1}/_{4}$" direct mount donut backup pad with soft foam interface pad
  matte finish: 120, 180, 280 grits, maroon siascuff
  semi-gloss finish: 120, 180, 280, 400, 600 grits, grey siascuff
· Microfiber hand towels

STEPS TO COMPLETION:

MATTE FINISH:

1. If sheet has deep scratches load the sander with a 120 grit abrasive disk. If no large or deep scratches are apparent, skip to step 4.
2. Sand the entire top to a uniform finish. Be sure to overlap sanding strokes by at least 1/2 the pad diameter and cover the entire surface. See Fig. 18.2.A. Care must be taken not to concentrate too heavily over the seam area, as this may develop a different look in this area (particularly with particled colors).

3. When this is finished, wipe the top with the microfiber cloth and inspect for leftover scratches and uniform finish.
4. Re-sand the top as in Step 2 with a 180 grit disk and repeat the cleanup procedure. Inspect top once again.
5. When this is finished, wipe the top and inspect for leftover scratches and uniform finish.
6. Re-sand the top as in Step 2 with a 280 grit disk and repeat the cleanup procedure. Inspect top once again.
7. Wipe the top down with a wet cloth, then buff with a maroon siascuff pad. Make only one pass using a random circular/figure eight motion as shown in Fig.18.2.C. Spray surface lightly with water and sand until water evaporates. Wipe surface clean using a clean microfiber cloth.

SEMI-GLOSS FINISH:

1. Complete steps 1–7 from Section 18.6, which describes how to create a matte finish for Corian®. Do not use the maroon siascuff pad.
2. Re-sand with a 400 grit disk. Be sure to overlap sanding strokes by at least 1/2 the pad diameter and cover the entire surface. See Fig. 18.2.A
3. When this is finished, wipe the top with the microfiber cloth and inspect for leftover scratches and uniform finish.
4. Re-sand with a 600 grit disk. Be sure to overlap sanding strokes by at least 1/2 the pad diameter and cover the entire surface. See Fig. 18.2.A
5. When this is finished, wipe the top with the microfiber cloth and inspect for leftover scratches and uniform finish.
6. Buff entire top with a gray siascuff pad until semigloss appearance is uniform. Make only one pass using a random circular/figure eight motion as shown in Fig.18.2.C. Spray surface lightly with water and sand until water evaporates. Wipe the surface clean with a microfiber cloth.

19.1 PACKING FOR TRANSPORT

A semifinished Corian® installation is a valuable and fragile investment, and should be treated as such.

STEPS TO COMPLETION:

1. The parts are normally heavy and fragile, so consideration must be given to portability and site access when planning packing for transport.

2. Wrap the parts in bubble sheet, corrugated cardboard or furniture blankets.

3. Brace any cutouts to avoid flexing of the seams and corners.

4. Cushion the floor of your transportation vehicle.

Helpful Hints:

Parts are best transported on edge.

Do not transport any Corian® with parts touching face to face.

Do not allow any part to slide around during transportation.

Do not allow Corian® parts to become overheated in the sun on hot days. Bring all pieces indoors as soon as possible.

Making special transport jigs for transporting parts with shape is common. This acts like a cage around the underside of the bowl, as well as bracing the entire top.

19.2 RACKING FOR TRANSPORT

STEPS TO COMPLETION:

1. Many designs have been made for transportation, but typically carpet-covered vertical piping makes good racking.

2. Some prefer to have a removable "A" frame that they can hoist off the delivery vehicle. This looks like the method used for transporting glass.

3. The racks also should have securing straps.

4. Take two people on the delivery vehicle to get the product onto site in a safe and good condition.

Helpful Hints:

Do not transport Corian® parts horizontally on roof racks. This causes stress, and because of the weight it will bounce and cause breakage.

Much time and skill has been spent in the factory building a first-class product. Good racking is insurance for getting the product to site in good condition.

19.3 INSTALLATION

19.3.1 BASIC PROCEDURES AND CROSS CHECK

On-site installation is equally, if not more, crucial to attain a satisfactory result in terms of the final performance of a Corian® countertop.

1. Upon arrival at the site, recheck site access and power availability. This should have been done during the templating visit.

2. Ensure that cabinets are complete and satisfactorily installed. If not, contact customer and cabinet installer. If necessary, install perimeter support.

3. When satisfied with Steps 1 and 2, unload all parts and check that all materials and tools required are present.

4. Seal off installation area to prevent the spread of dust to remainder of house.

5. Unwrap all parts and check for transportation damage.

6. Lay the complete countertop on the cabinets and trial-fit all parts; double-check that all parts are the correct fit.

7. Double-check that expansion gaps of $^{1}/_{16}$" (1.5 mm) are left against all walls.

8. Make sure that all cutouts are sized properly. Trial fit the cooktop to be sure

9. Check surrounding conditions for anything that could contaminate your work (e.g., dust, other trades).

10. Consider the sequence of on-site seams that will allow best clamping procedure.

11. Before mixing and applying the glue, make sure that the seams are thoroughly cleaned with clear, denatured alcohol.

12. One at a time, complete the on-site seams, making sure they are a perfect fit—this may be how the entire job will be judged.

Note:

Be very careful with the denatured alcohol. It can ruin some cabinet finishes.

13. When seams are completely set, remove excess glue and sand seams to the desired finish. If possible, use a sander equipped with vacuum dust collection.

14. Upon completion, protect finished surfaces from other trades by sticking protective sheeting over the surfaces.

15. Discuss care and maintenance with new owner, including delivery of Care and Maintenance Booklet and videotape.

16. Using screws, secure a 12" x 12" piece of color-matched material to the inside of the sink base cabinet.

Note:
It is the responsibility of the CF/I to submit the proper Warranty information. This can be done at www.warrantycards.com.

Helpful Hints:

Make sure that all techniques are well planned, and that all the tools required are on hand. Tool bins on casters make this easier and faster.

Never lift any Corian® piece that cannot be handled comfortably; when in doubt, seek assistance.

Always ask for help rather than risk a mistake. Good planning means a good installation.

19.3.2

DETAILED STEPS OF COMPLETION

1. Safety

When handling Corian® manually, always use enough people to lift heavy sections using a safe method of lifting (see Safe Handling and Storage chapter).

After unpacking the Corian®, care must be taken to ensure that all nails and screws are removed, and any packaging material is disposed of safely before proceeding with the installation.

Approved safety shoes and goggles should be worn and clothing should be suitable for working with machinery (i.e., no loose cuffs, etc).

Be sure the working area is well ventilated when using adhesives and clear, denatured alcohol.

Caution: Denatured alcohol is flammable. Keep away from sparks and open flames.

Check that all electrical tools are safe to use, and only use sharp router bits and hand tools.

2. Inspection of Corian®

Check that all the pieces to be installed are as per site drawing, the right color, thickness and edge detail.

Inspect all edges for imperfections, observe for excessive warp or any other obvious defects.

Contact the Corian® fabricator if you find any major defect before you proceed.

3. Tools and Materials

Figure 19.3.2.A

Below is a list of items that may be needed in various installations of Corian®.

- safety goggles
- sawhorses and support rails
- straightedges
- various clamps
- extension cord
- various routers
- router bits, sharp and correct size
- random orbital sander
- belt sander, 4” x 24” (100 mm x 600 mm), sanding belts 100- or 120-grit
- electric plane (if desired)
- electric jigsaw (not to be used on Corian®)
- microfinishing films: 100, 60, 30, 15 micron or sandpapers: 80, 120, 150, 180, 220, 320, 400 (open-coat silicone carbide)
- Scotch-Brite® pads, maroon and gray
- caulk gun
- silicone sealant for gluing and caulking
- hot-melt glue with glue sticks having 45- to 60-second open life
- Corian® Joint Adhesive
- carpenter tools (i.e., block plane, chisels, hammer, screwdrivers, knife, tape measure)
- polyethylene sheeting
- drop cloths
- clean cotton cloths
- clear, denatured alcohol or acetone in areas with VOC restrictions
- aluminum conductive tape (from Authorized Distributor of Corian®)
- laminate shims
- plastic release tape
- masking tape

4. General Care of Corian®

Do not flex sheets when lifting or carrying Corian®.

If Corian® is exposed to extreme temperatures, then it must be allowed to reach room temperature, approximately 65–70°F (18–20°C), before commencing work with the material.

5. Preparing Job Site for Installation

Survey site and determine best working options.

Any alteration work may best be done away from the actual installation site.

The cutting and sanding of Corian® creates much dust, and one of the main considerations is to reduce this to the minimum.

All sanders should allow for extraction into a vacuum cleaner.

Use polyethylene sheeting and drop cloths to protect all areas where appropriate.

Use a fan to exhaust dust and fumes to outside. Cover HVAC vents and light fixtures.

6. Preparing Base Units/Cabinets

When replacing old countertops, care must be taken in removing them. All screws, nails and any sharp edges should be removed from the countertops and be disposed of in a safe manner.

The existing base units should be checked for strength and stability. If any remedial work is required to bring them up to standard, it should be carried out at this stage.

All electrical, gas and water appliances should be disconnected/connected by licensed and qualified persons when applicable.

When fitting new base units/cabinets, etc., prepare same as follows.

They should be leveled and plumbed, fixed to each other and then secured to the back wall. The tops of all the cabinets must be within $^{1}/_{8}$" of a flat surface over a 120" run and must be flush with each other.

Corner base units may require wood strips fastened against the back wall to support the Corian® countertop. Some corner cabinets with revolving shelves require additional support in front. See Section 9.5.

All cutouts for sinks and cooktops must have 1" x 4" front-to-back support no closer than 1" (25 mm) and no further than 3" (76 mm) from each side of the cutout. Be sure to allow for corner blocks on cooktop cutouts.

In kitchens, check for dishwasher position. Be sure there is support for

countertop front and back across opening. Supports must pass Span Test. See Section 9.6.

Notch out support strips to allow for seam reinforcement strip.

This must be done to comply with DuPont Requirements.

With kitchen base units that have solid tops (dust covers), the central portion should be removed, leaving a perimeter of approximately 2"–3" (51–76 mm). This will allow heat to dissipate but not weaken the base unit construction. **This is strongly recommended.** However, if the client will not agree to the removal, then the DuPont Warranty will still apply.

Figure 19.3.2.B

If Corian® overhangs any base units without support, 1/2" (13 mm) Corian® should not extend more than 6" (152 mm), and 3/4" (19 mm) Corian® more than 12" (305 mm) unsupported. This is necessary in order to comply with the DuPont Warranty. See Section 9.3 for details.

Determine on the base/cabinet units where the field seams are to be made in the countertops. Protect the inside of the cabinets from Joint Adhesive that may drip inside during seaming.

If countertop perimeter support is not built into the countertop, it must be installed now. See Section 9.2 for details. If the perimeter support is built into the countertop, shim between support strips and cabinets as needed. Then fasten strips to cabinets.

Note:
If cabinets do not provide proper support for the countertop, then support strips must provide all the necessary support. If there is any doubt, perform the Span Test as outlined in Section 9.6

7. Preparing Countertops and Seams

The Corian® countertop can now be trial-fitted onto the prepared base units. All parts may not fit, as some fabricators purposely oversize the countertops for on-site adjustment. Space should always be allowed, as Corian® needs room to expand. Each countertop requires at least 1/16" (1.5 mm) at each wall. However, do not leave gaps any larger than necessary. Larger gaps are unsightly and very difficult to fill with silicone or hide with backsplashes.

This must be done to comply with DuPont requirements.

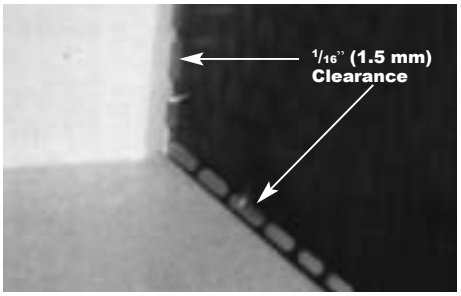


Figure 19.3.2.C

8. Scribing (countertops without coved backsplashes)

Before preparing seams in the countertop, check to see if any scribing to the back or side walls is required.

To scribe the countertop, follow the instructions below.

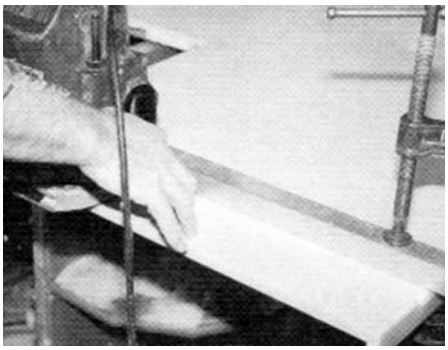
Mark the back edge of the Corian® to the wall using the pattern template made on the job.

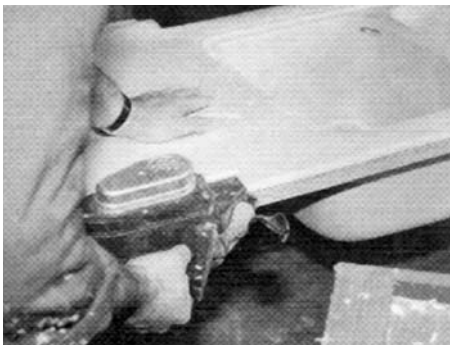
To remove excess material, an electric plane, a router with a straight cutter or a belt sander can be used, whichever is preferable. See Figure 19.3.2.D.

Always sand off any chatter marks, nicks and chips from the back edge and ease any sharp edges. Round over upper and lower edges of countertop behind cooktop cutout to a 1/16" (1.5 mm) radius.

Once the scribe is complete, place laminate shims between the wall and the reverse side of the Corian®. Make the shims long enough so that they can be removed easily. This will give a gap of 1/16" (1.5 mm), which may be caulked with silicone sealant later if needed.

Figure 19.3.2.D





9. Preparing Seams

For seams with front edges not exceeding 2” (51 mm), there are two most commonly used methods as follows.

A. Single-Edge Preparation

Use a router, minimum 2-hp, fitted with a sharp, double-fluted tungsten carbide straight cutter.

Clamp a true straightedge to both sides of the countertop to be adjusted. Measure the base plate of the router to the leading edge of the router bit and adjust to suit the cut accordingly.

Working from left to right, firmly press the base plate of the router against the straightedge and proceed to remove the excess material.

This method of preparing the edge will give a straight, square and parallel cut. A second pass should be made to reduce chatter marks.

B. Mirror Cut Method

This term is used when both edges of the seam are cut simultaneously. The technique is similar to that described in method A; the only change is that both sides of the pieces to be seamed are cut together.

Bring both parts of the countertop parallel to each other, allowing a gap 1/8" (3 mm) smaller than the router bit to be used. Rout the seam by moving from left to right; each edge will be routed simultaneously. This should give a perfect seam every time.

When preparing seams with high coved backsplashes or front edges exceeding 2" (51 mm), some work may need to be done from the underside of the countertop.

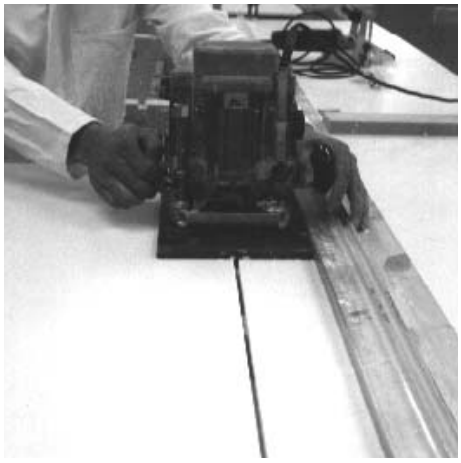


Figure 19.3.2.E

10. Wall Cladding

If wall cladding is to go behind the countertop, this should be done prior to seaming. Before applying Corian®, the wall to be clad should be smooth and free from dirt and grime. Use clear, denatured alcohol and a clean cotton cloth for this purpose.

Corian® can be applied directly against existing wall tiles as long as they are sound and well secured.

All cutouts for electrical sockets, etc., ***MUST*** be made with a router.

All edges should be sanded with 150-grit sandpaper to finish.

Note:
***Do not* fabricate a full-height 1/4" coved backsplash. The chance of fracture at the cove is too great.**

Cut all wall cladding pieces and trial-fit. An expansion space of 1/16" (1.5 mm) minimum should be allowed in order to comply with the DuPont Warranty. Expansion space should be allowed at return walls and at upper and lower cabinets.

Clean the reverse side of the Corian® wall cladding with denatured alcohol and a clean cloth.

Apply silicone to the reverse side of the Corian® sheet in the following manner.

- Apply a continuous bead of adhesive around the sheet of Corian® approximately 1" (25 mm) from the outside edge.
- Then run a bead in an "S" pattern, within the inside area. Any cutouts (i.e., electrical sockets) require a continuous bead of adhesive 1" (25 mm) in from the cutout.
- To eliminate the need for bracing the Corian® wall cladding, hot-melt glue can be applied to the reverse side of the sheet shortly before adhering it to the wall.
- Press the Corian® wall cladding firmly against the wall. Use a straightedge to check for any deviation.

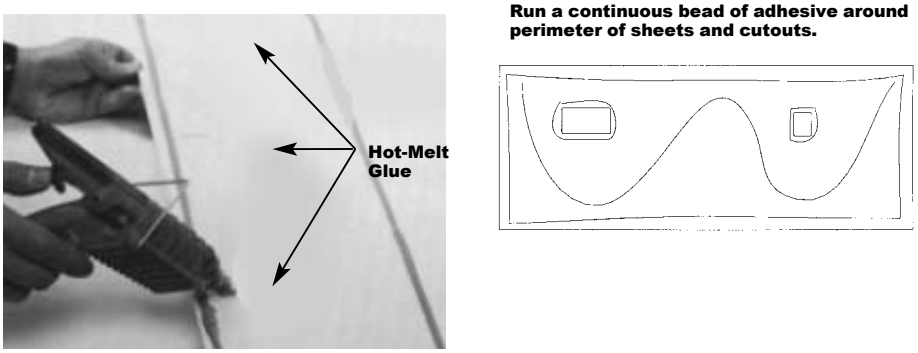


Figure 19.3.2.F

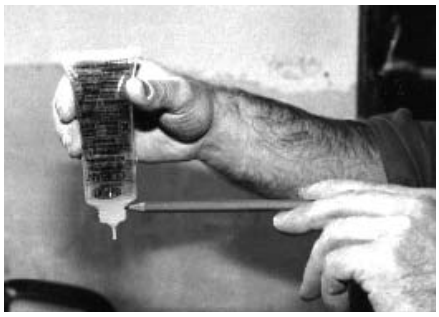
11. Gluing Seams Using Corian® Joint Adhesive

Once the countertop is scribed and the wall cladding is installed behind the countertop, check that all seams are parallel, with no gaps showing when brought together.

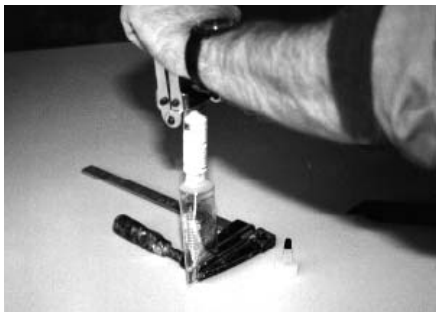
See Chapter 10 for complete details on seaming.

Figure 19.3.2.G

1. Read instructions inside the package and check for color.



2. Turn the clear tube upside down and check that the clear liquid activator reaches to the top of the screw thread. (Not enough activator will affect the performance of the adhesive.)



3. Squeeze Part A into Activator tube.

4. Mix with an orbital sander for 45 to 60 seconds or by hand for 5 minutes.

Decide upon the method to be used to bring the seam together. There are several ways to do this; for example:

A. OEM vacuum clamping systems

B. Wood blocks applied to either side of the seam using hot-melt glue and clamps to bring them together

For reinforced seams, move the countertop apart, exposing the full width of the Corian® reinforcement strip.

Clean the seam and the reinforcement strip with a clean, white cloth and clear, denatured alcohol.

Apply and spread Corian® Joint Adhesive along the full length of the reinforcement strip and one continuous bead at the bottom edge of the seam.

Push the two parts of the countertops together, leaving a $^{1}/_{8}$" (3 mm) gap.

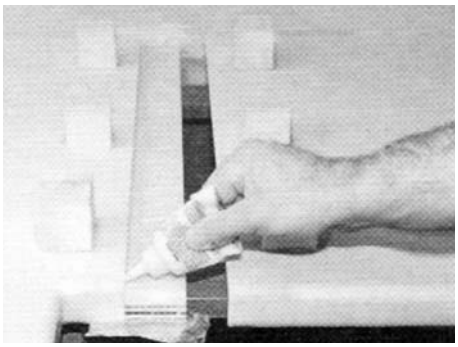
Dam the front edge of the countertop with plastic release tape.

Use remaining contents of the Corian® Joint Adhesive and fill the seam, making sure that sufficient adhesive is used so that when the sheets are brought together, a continuous bead of Corian® Joint Adhesive flows out of the seamed area.

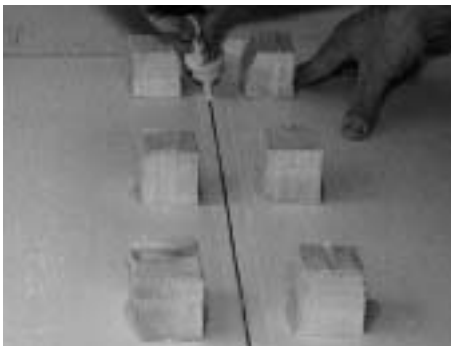
Apply pressure to the seam with the method you've chosen, checking for alignment.

Figure 19.3.2.H

1. Clean the seam with clear, denatured alcohol and a clean, white cloth.

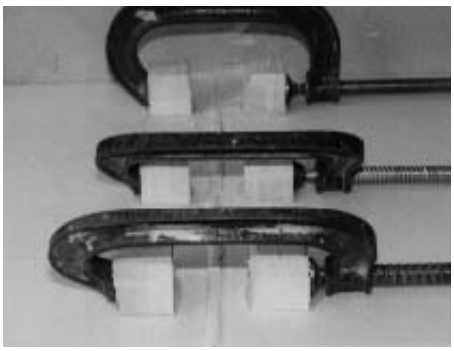


2. Apply the Corian® Joint Adhesive to the reinforcement strip.



3. Push the sheets toward each other, leaving a 1/8" (3 mm) gap. Use the rest of the Corian® Joint Adhesive to fill the seam.

4. Push the sheets together.



5. Clamp up without overtightening.

Allow the Joint Adhesive to cure for about 45 minutes. To check if the adhesive has cured, press against the seam with a fingernail. If any indentation is apparent, then it should be left for an additional period of time.

Helpful Hints:

For higher productivity, turn pieces facedown on a flat surface covered with a release agent to make seam. With top upside-down, the deck seam, front edges, the sink or lavatory, any reinforcement blocks and the seam reinforcement can be glued on at the same time.

12. Finishing Seam

Remove clamping device, or any other materials used to tighten the seam. Spray blocks with denatured alcohol to loosen hot-melt glue.

If blocks were used, remove the hot-melt glue deposits with a wide, sharp chisel and clean off the surface.

The best method to remove the excess adhesive is with a router on skis. To minimize dust on the job use a sharp, low-angle block plane. Remove the excess Corian® Joint Adhesive as close to the back wall as the block plane will allow. The remainder of the excess should be removed with a wide, sharp chisel, making sure not to damage the surface of the Corian®.

Figure 19.3.2.I

Clean off debris and then sand in the following manner:

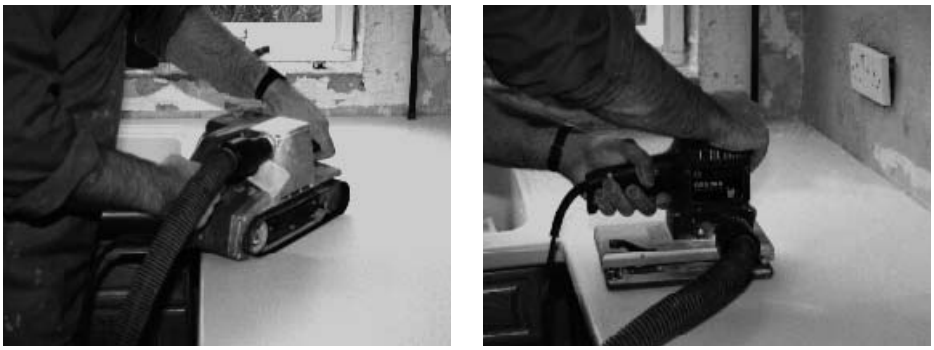
A. Random Orbital Sander

Use a random orbital sander on “direct drive” and equipped with vacuum dust collection with a 100-micron sanding disk to take down the excess Joint Adhesive flush to the surface and remove fabrication scratches.

Clean the surface with a damp, clean cloth to remove any sanding residue. Change to 60-micron sanding disk and sand the seam area once again.

Clean off any sanding debris. Complete the finishing with 3M maroon Scotch-Brite® pad to give a matte finish. Other gloss levels can be reached by following steps listed in Section 18.

Figure 19.3.2.J



B. Belt Sander

Note:
Do not use belt sander to remove excess adhesive.

If seam is out of alignment, as a last resort use a belt sander with a 4" x 24" (100 x 600 mm) wide base and 120-grit silicone carbide paper.

When using a belt sander, hold it flat to the surface and work beyond the seam, continually moving to avoid overheating and gouging.

Take frequent breaks to check progress and to allow surface to cool. Checkbelt for clogging. Do Not overheat surface!

Great care must be taken not to gouge the Corian® surface during this process. The belt sander requires an extractor facility, allowing extraction directly into a vacuum, as this procedure creates excessive dust. A belt sander will leave the surface of the Corian® with quite heavy sanding marks. The sanding procedures stated above should be used to eliminate this.

Continue the same procedures for all remaining seams.

Helpful Hint:

Use a sanding system that features a vacuum dust collector to control dust on the job.

To minimize finishing time, use the finest abrasive possible to start finishing. Skip the rougher abrasives if they are not needed.

13. Fixing Corian® Countertops to Base/Cabinet Units

There are several ways to secure countertop to cabinets. The two most popular ways are silicone adhesive or screws. If Corian® is set directly onto perimeter support, use small dabs of silicone such as GE 1200 Series sealant, no closer than 12" (305 mm). If wood support is attached to underside of countertop with silicone, screws can be used as follows:

Drill holes in the back and front cabinet rail, using a high speed drill about 1/8" (3 mm) larger than the screw to be used to fix the countertop down to the base/cabinet units.

Select screws that will not pass through the supports, and screw into the support rails, taking care not to overtighten the screw.

Screwing directly into Corian® is not allowed and cause the Corian® to crack.

Figure 19.3.2.K

14. Wall Cladding Fitting on Top of Countertop

If wall cladding or square backsplash is to fit on top of the Corian® countertop, now is the time to fix it. For wall cladding, follow the previous instructions in this Chapter. (see Section 19.3.2 #10 - Wall Cladding). For square backsplashes, check and scribe for proper fit, allow for expansion.

Clean both the backsplash and countertop with clear, denatured alcohol and a clean cloth.

Place a continuous bead of DuPont color-matched sealant the full length of the bottom edge of the backsplash. See Fig 19.3.2 L

Turn the backsplash over and press against the countertop and the back wall using a rolling action. Any sealant which is smeared onto the backsplash should be removed with a sharp, wide chisel, followed by a clean, white cloth dampened with clear, denatured alcohol. Another method of fitting square backsplashes is to use Corian® Joint Adhesive. This would be applied in the normal manner and residue cleaned as previously stated.

Caulk inside corner between backsplash and countertop using "push" method if desired.

Figure 19.3.2.L

DuPont does not recommend that wall cladding be adhered to backsplashes or countertops using Joint Adhesive.

DuPont Sealant, that allows for possible future replacement of countertop, should be used.

15. Faucet Holes

Faucet holes can now be made if previously not done by the fabricator. This can be achieved by using a router with a sharp, straight, carbide-tipped router bit and a template, or by using a hole cutter.

It is essential that the top and bottom edges be sanded or routed to a 1/16" (1.5 mm) radius to avoid stress risers.

16. Cooktop Cutouts On-Site

DuPont highly recommends that cooktop cutouts be done by the fabricator in the factory, as complicated techniques make it difficult for the installer to carry out the work on-site. In some cases, a partial cutout is made in the shop and completed on-site. If, however, the installer has no option and finds that this work has to be done, then the following procedures must be followed.

The cutout must be done with a router and a sharp $^{3}/_{8}$" to $^{1}/_{2}$" (10 mm to 12 mm), straight, carbide-tipped cutter. This is the only recommended tool for this procedure. Be sure corners of cutout are properly reinforced and shaped. See Section 7.4.

Great care must be taken to sand all inside edges, removing any chatter marks. The top and bottom edges must be routed or sanded until they are rounded to minimum $^1/_{16}$" (1.5 mm) radius and smooth.

Particular care must be taken when sanding the corners, as this is a vulnerable area. Allow a minimum of $^1/_8$" (3 mm) gap between the cutout and the electrical appliance. If more space can be given, then do so.

Apply .004" aluminum conductive tape around the cutout. The tape should be applied so that it extends $^1/_4$" (6 mm) below countertop and across top surface so that entire flange of cooktop rests on the tape.

All four corners should be completely covered with the tape, making sure all edges overlap.

To Install Cooktop:

- Center cooktop in cutout.
- Cushion clamps or hold down bolts with small pieces of wood. Snug clamps or bolts firmly.
- Cooktop may be fastened using dabs of silicone at each corner.
- Trim excess aluminum back to edge of cooktop, being careful not to score the countertop.

Caution: Do not screw cooktop down. Do not overtighten mechanical fasteners.

17. Inspection and Cleanup

If not done previously, sand entire top with a random orbital sander and a 60-micron sanding disk. Wash top clean. Then buff the entire surface with the appropriate Scotch-Brite® pad to provide a uniform surface appearance.

Use screws to secure the color match piece provided by the fabricator to the inside of the sink base cabinet.

Clean up the site thoroughly, removing all excess materials.

Figure 19.3.2.M

Buff the surface with a Scotch-Brite® pad.

Note:
If countertop is made with a Lustra Series color, be sure to mark the "direction" of the material on the bottom of countertop and on the color-match piece.

18. Care Instructions Given to Customer

If possible, customers should be shown how to care for their new countertop and, if needed, the Corian® sink. Leave the "Corian® Care Kit" with your customer.

19. Warranty Information

If you have Internet access, the residential warranty may be registered with DuPont by logging in to www.Salesforce.com to enter the information. If you do not have Internet access or are not registered with Salesforce.com, call

(800) 426-7426 Prompt 2 (Owners), then Promt 1- Warranty Registration. The person answering can help you either get properly registered or -provide you an alternative way to register the Warranty.

Scotch-Brite® is a trademark of 3M Company, USA.

This section reviews several methods for fabricating and installing food service countertops containing hot and/or cold food trays. Several alternative methods are given. Fabricators should select the methods that are most appropriate for their shop operation and the job requirements.

20.1
CUTOUTS

Cutouts

Each cutout that will be heated or cooled must be prepared according to Figure 20.1.A, 20.1.B or 20.1.C.

Note:
In all cases, cutout corner reinforcements and support/insulation are still required. The only exceptions are small (less than 7" [175 mm] dia.), round holes in a common **cold** cabinet. These usually hold condiments and are not subject to high stresses. However, do not confuse these with soup cutouts that are subjected to high heat and stress and require the procedures.

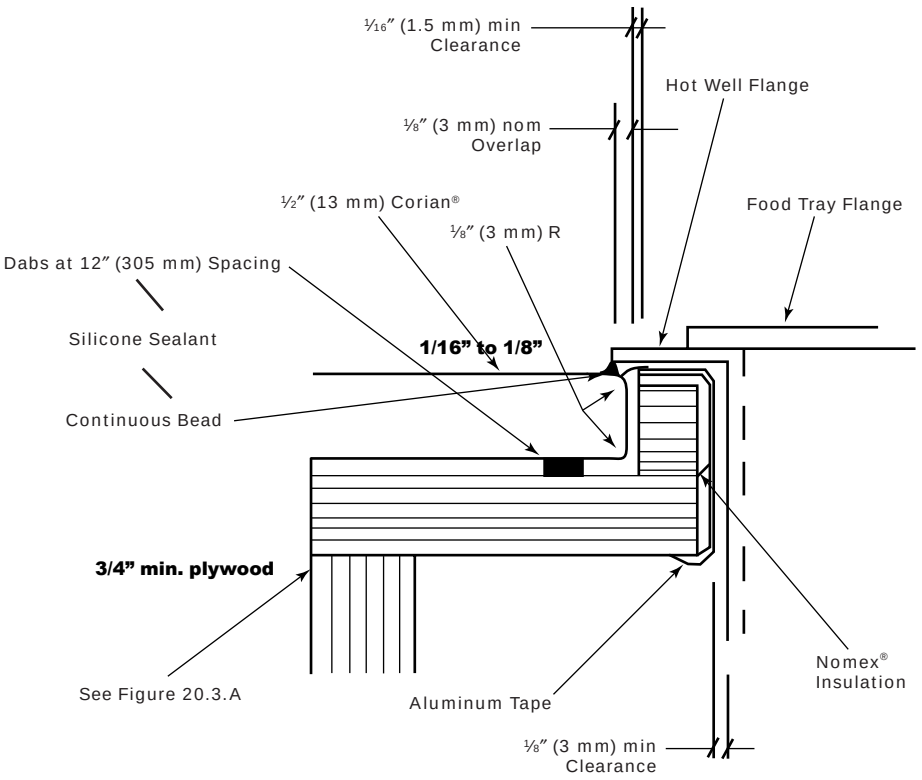


Figure 20.1.A

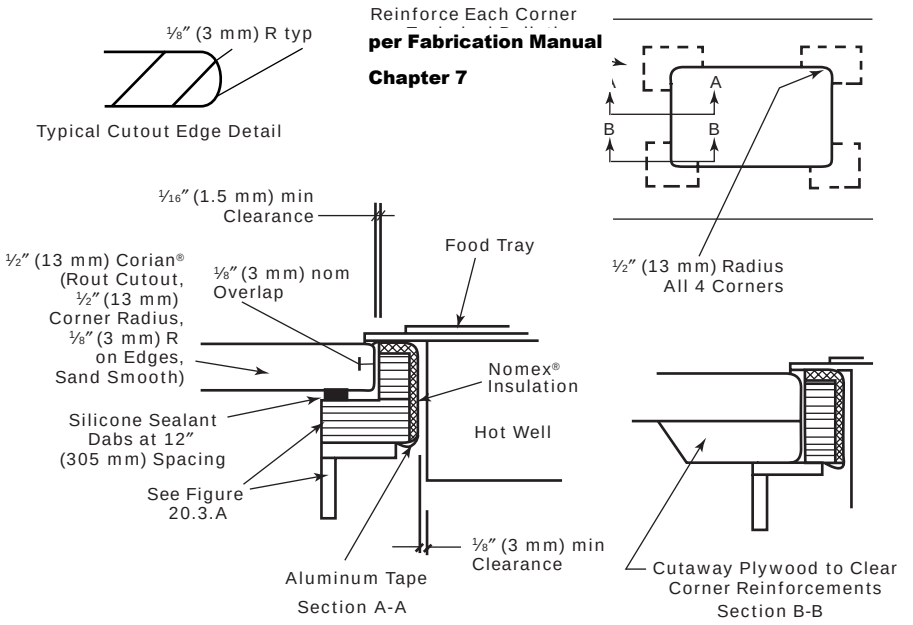


Figure 20.1.B

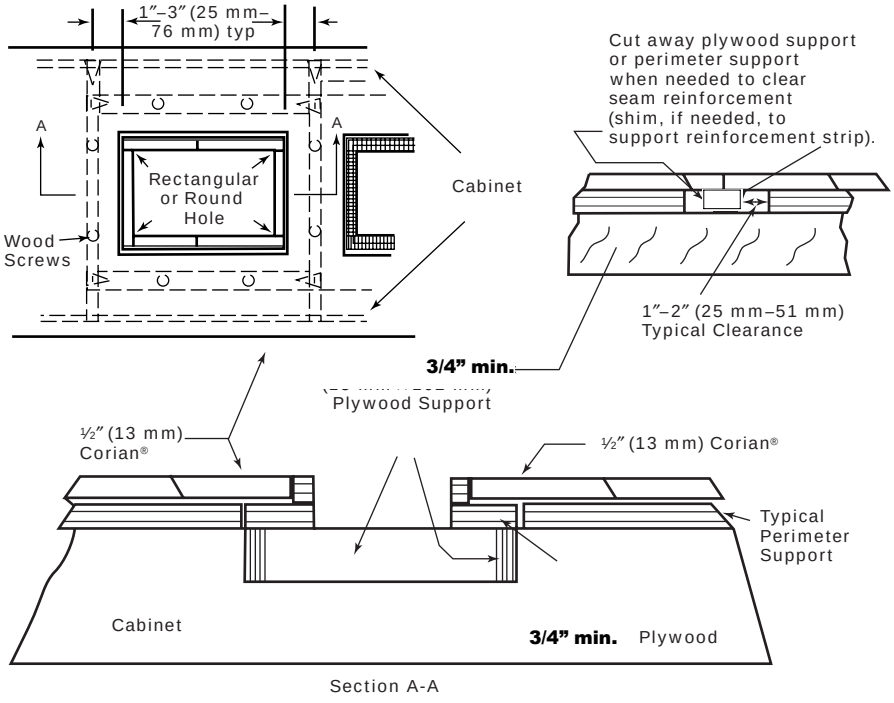


Figure 20.1.C

20.2

INSUL

Insul

Figure 20.2.A shows that the food and heating trays rest on a "support" rather than directly on the Corian® surface. The support also holds a strip of insulation to isolate the heat or cold from the trays. Notice that the tray flange overlaps the Corian® by 1/8" (3 mm) and has a bead of silicone sealant separating it from the Corian® surface. Also see Figure 20.2.B and 20.2.C for alternatives.

Figure 20.2.A

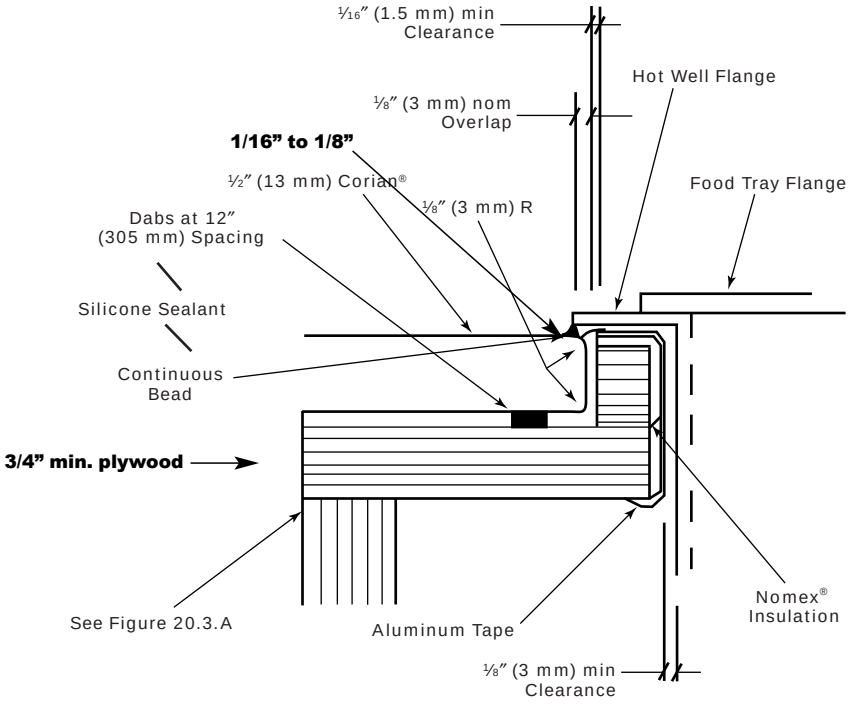
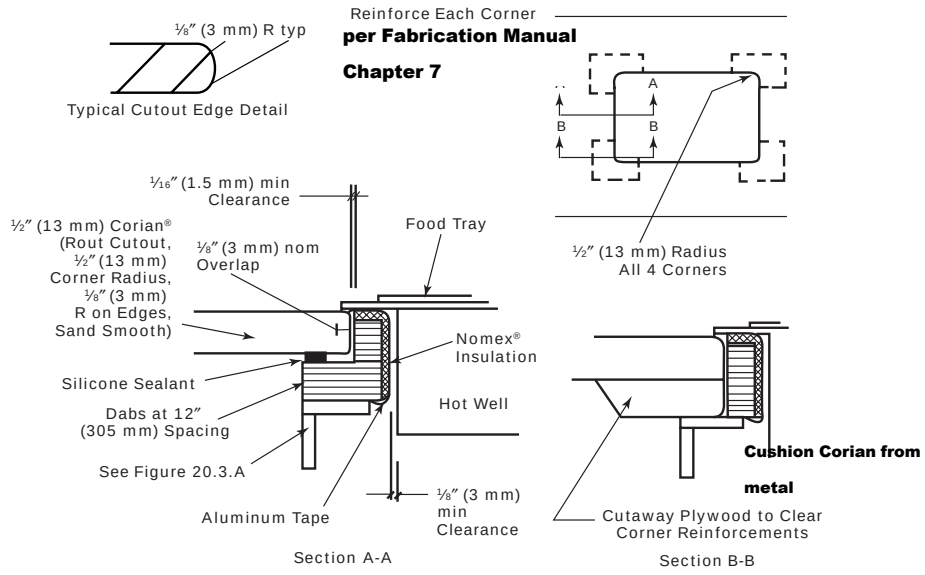


Figure 20.2.B



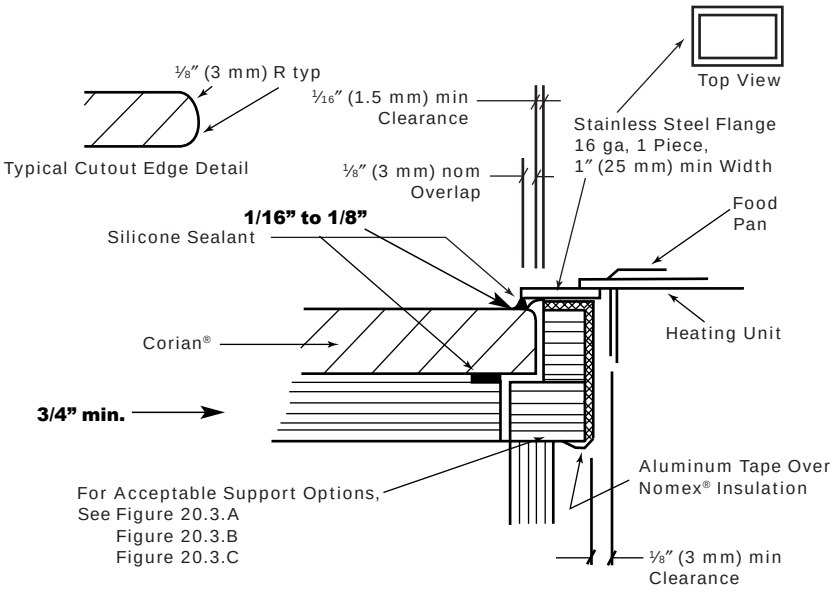

⅛″ (3 mm) R typ
Typical Cutout Edge Detail
1/16″ (1.5 mm) min Clearance
⅛″ (3 mm) nom Overlap
Top View
Stainless Steel Flange 16 ga, 1 Piece, 1″ (25 mm) min Width
Food Pan
1/16" to 1/8"
Silicone Sealant
Heating Unit
Corian®
3/4" min.
Aluminum Tape Over Nomex® Insulation
For Acceptable Support Options, See Figure 20.3.A Figure 20.3.B Figure 20.3.C
⅛″ (3 mm) min Clearance

Figure 20.2.C

20.3

SUPPORT

Support

Figure 20.3.A shows the construction of a plywood support. A flat piece of plywood fits under and around the opening. A frame of plywood strips is installed under this flat piece to provide additional support. The frame is attached to the cabinet with screws. The frame also allows the flat piece to be notched to allow clearance for the seam reinforcements. Also see Figures 20.3.A, 20.3.B, 20.3.C and 20.3.D for alternatives.

Notice that Figure 20.3.A shows a reinforcing strip (ref: Section 10.3) resting on the front and back edges of the cabinet. If a seam position does not allow the reinforcement to rest on the cabinet, run additional 1" x 4" (25 mm x 102 mm) plywood strips under the reinforcement. Use strips every 12" to 18" (305 mm to 457 mm). For short seams (less than 12" [305 mm]), one strip in the middle is adequate.

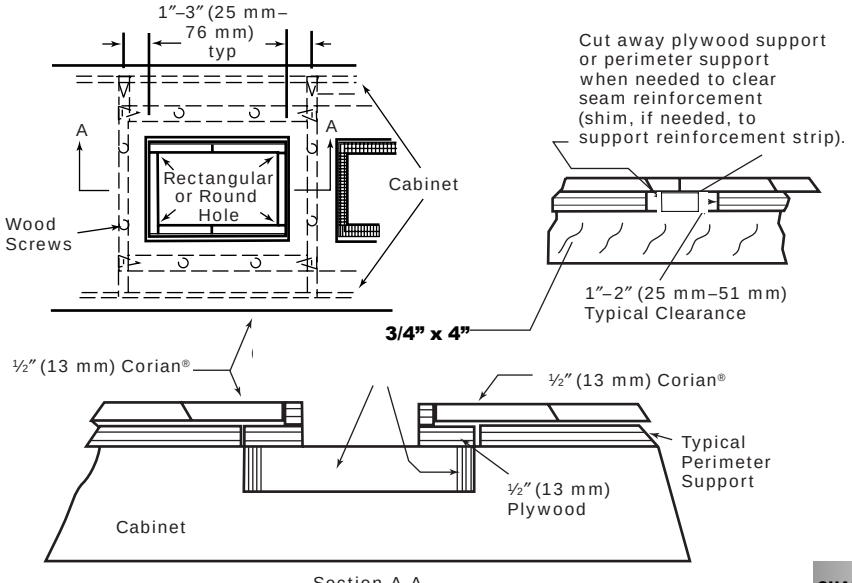

1″–3″ (25 mm–76 mm) typ
A
A
Rectangular or Round Hole
Cabinet
Wood Screws
Cut away plywood support or perimeter support when needed to clear seam reinforcement (shim, if needed, to support reinforcement strip).
1″–2″ (25 mm–51 mm) Typical Clearance
3/4" x 4"
½″ (13 mm) Corian®
½″ (13 mm) Corian®
Typical Perimeter Support
½″ (13 mm) Plywood
Cabinet

Figure 20.3.A

Section A-A

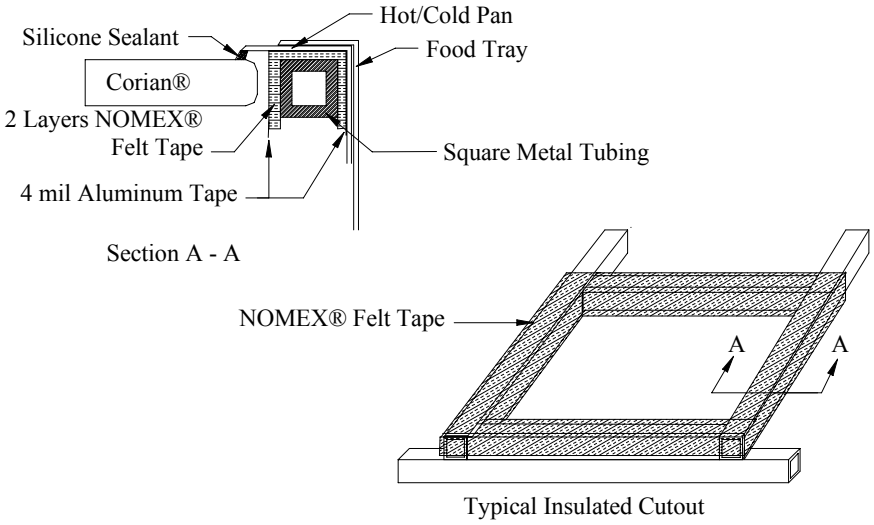


Figure 20.3.B

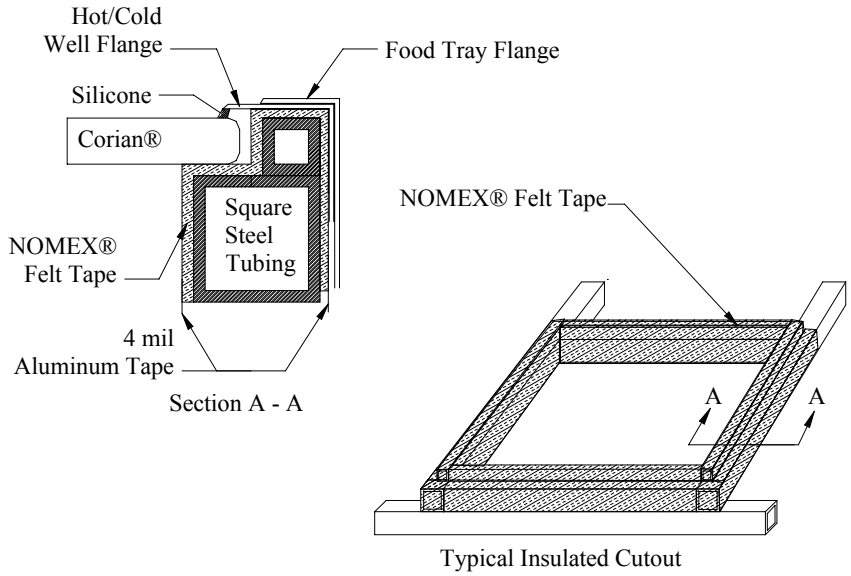


Figure 20.3.C

Figure 20.3.D

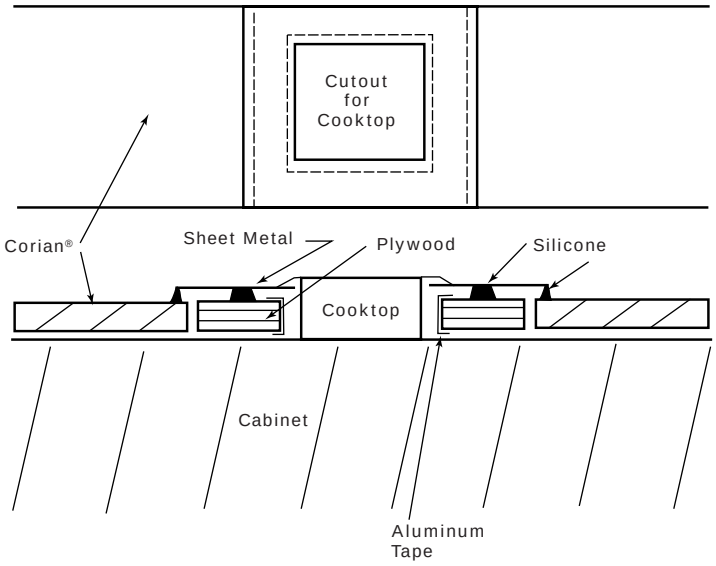
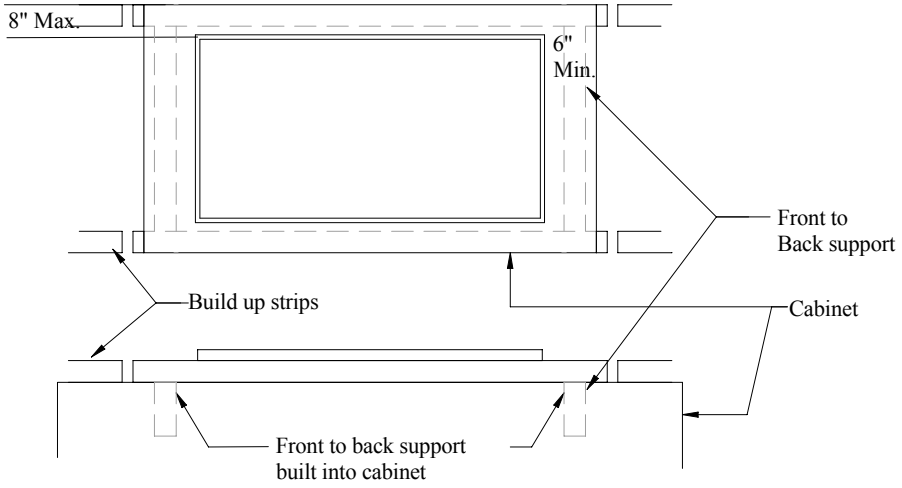


Figure 20.3.E

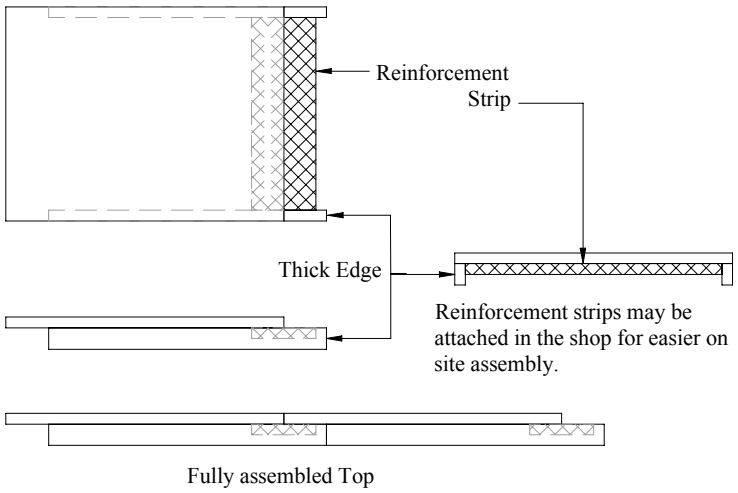


20.4
SEAMS

Seams

All seams must be reinforced and supported per section 10.3. If a seam position does not allow the reinforcement to rest on the cabinet, use 1/2" x 4" (13 mm x 102 mm) plywood strips, or steel angles/tubing, on edge, under the reinforcement. Strips can be at any angle to the reinforcement (parallel, perpendicular, or in between) and should be placed approximately 12" to 18" (305 mm to 457 mm) apart. For short seams (less than 12" [305 mm]), one support strip near the middle is adequate. See Figure 20.4.A for a method of assembling and reinforcing field joints.

Figure 20.4.A


Reinforcement
Strip
Thick Edge
Reinforcement strips may be attached in the shop for easier on site assembly.
Fully assembled Top

20.5
EXPANSION JOINTS

Expansion Joints

Most designs allow for some expansion joints. If possible, separate hot sections of counter from cold sections with a 1/8" (3 mm) wide silicone-filled joint. The typical dry/bolted joint is an acceptable alternative. So are bolted joints with flexible trim strips or "T" moldings. If expansion joints are not possible, use at least a 1" (25 mm) radius at each inside corner formed by the intersection of each section of countertop. If there is a seam running through the corner, it will, of course, be reinforced and supported as described under Section 20.4 of the bulletin.

20.6
HEAT LAMPS

Heat Lamps

Heat lamps can generate extremely high surface temperatures and should ***never be*** used to heat a Corian® surface. Most health authorities require food to be kept at a temperature of at least 165°F (74°C). This should be accomplished by positioning infrared bulb heat lamps directly over and aimed towards the food. The lamp should be at least 20" (508 mm) above the Corian® surface, unless actual field measurements prove that a lower position will not heat the surrounding Corian® surface in excess of 150°F (66°C).

Rod or wire heat lamps are to be mounted at least 20" (508 mm) above the Corian® surface unless a permanently installed hot pad is used to protect the Corian® from exceeding 150°F (66°C). Mount heat lamps to allow for expansion and/or contraction of the Corian® top. **Heat lamps are not to be used to heat the Corian® surface.** Do not put a seam directly under a lamp.

Note: DoNot allow the temperature of the surface to exceed 150° F.

20.7
HOT PADS

Hot Pads

If desired, install steel rod hot pads at convenient locations to prevent hot food pots from resting directly on Corian® when refilling the food trays. See Figure 20.7.A for details.

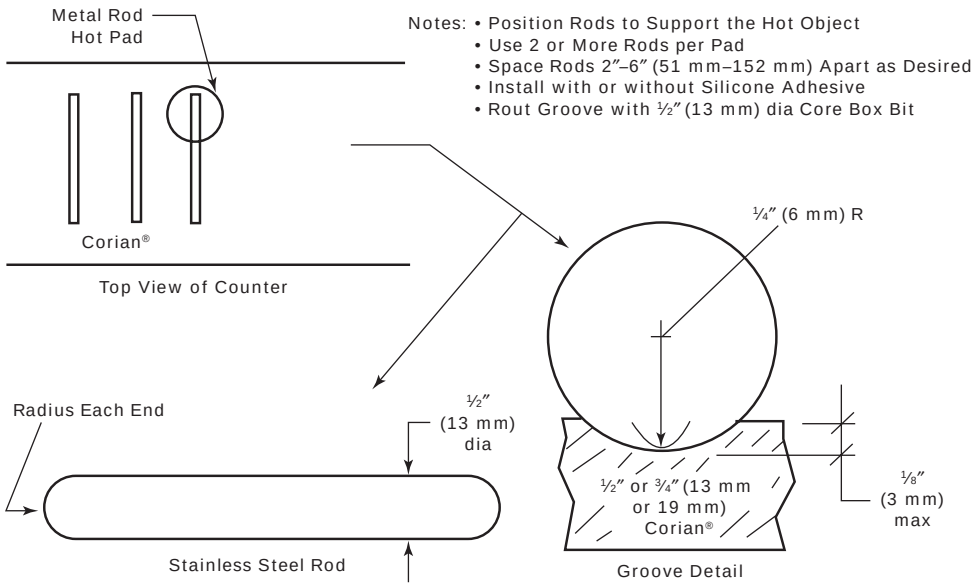

Metal Rod
Hot Pad
Notes: • Position Rods to Support the Hot Object
• Use 2 or More Rods per Pad
• Space Rods 2″–6″ (51 mm–152 mm) Apart as Desired
• Install with or without Silicone Adhesive
• Rout Groove with ½″ (13 mm) dia Core Box Bit
Corian®
Top View of Counter
¼″ (6 mm) R
Radius Each End
½″ (13 mm) dia
Stainless Steel Rod
½″ or ¾″ (13 mm or 19 mm) Corian®
⅛″ (3 mm) max
Groove Detail

Figure 20.7.A

20.8 TRAY SLIDES

Tray slides are typically at a different elevation than the primary food counter. It is wise not to hard-seam the tray slide to the primary counter. **Fabricate the tray slide with either a silicone-attached backsplash or a coved backsplash, and then attach the backsplash to the underside of the counter in a "reveal" style, using silicone to seal the backsplash to the underside of the counter.** This will isolate the expanding and contracting food surface from the room temperature tray slide, reducing stress and possibility of cracking.

While Corian® can be used for slide surfaces, most people prefer adding raised ribs of (contrasting color) Corian® or metal (stainless steel rods, brass strips, etc.) to raise the tray above any spilled liquids or food. For Corian® risers, pre-machine the strips, rout the tray slide and glue the strips into the slide with Joint Adhesive. Any strips not made of Corian® should be inserted into grooves using silicone sealant. See Figure 20.8.A.

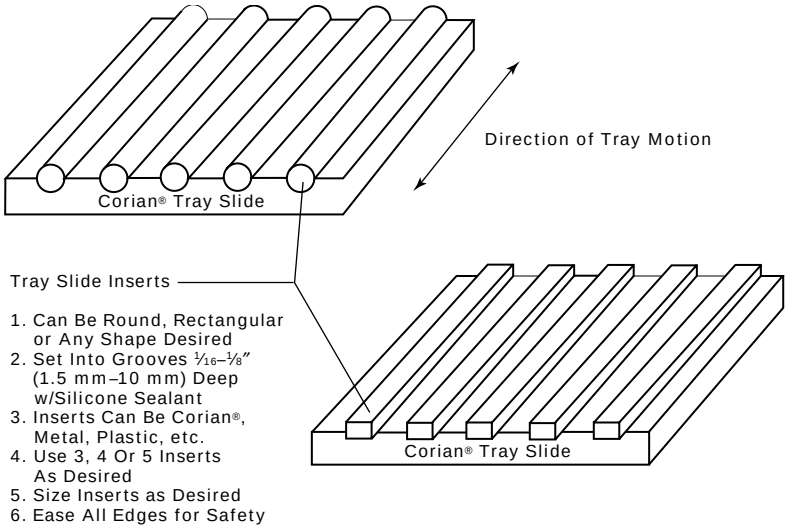

Direction of Tray Motion
Corian® Tray Slide
Tray Slide Inserts
1. Can Be Round, Rectangular or Any Shape Desired
2. Set Into Grooves 1/16–1/8" (1.5 mm–10 mm) Deep w/Silicone Sealant
3. Inserts Can Be Corian®, Metal, Plastic, etc.
4. Use 3, 4 Or 5 Inserts As Desired
5. Size Inserts as Desired
6. Ease All Edges for Safety
Corian® Tray Slide

Figure 20.8.A

20.9 SNEEZE GUARDS

Sneeze guards should be mounted in such a way as to allow for expansion and contraction of the Corian® surface. **Never** bolt directly through Corian® into the subframe. This will prevent movement and will likely cause cracking in the countertop.

20.10 UNUSUAL DESIGNS

Because we can't predict every possible design of food service counter you may be asked to fabricate, here are some key thoughts to keep in mind when building something unusual:

1. Avoid stress risers such as square inside corners and abrupt changes in thickness or width of the Corian®.
2. Avoid direct contact between Corian® and hot water or steam. Never undermount hot wells, which cause Corian® to become part of the steam tray. Corian® *will* whiten and crack.

3. Always allow room for expansion and contraction of the Corian® top. Ensure that overhanging edges have 1/8" (3 mm) minimum clearance, so they do not bind up when the top shrinks during shipment in cold weather or when the metal casework expands faster than the Corian®. Provide 1/8" (3 mm) clearance between the Corian® top and columns or brackets penetrating through the top. Clearances can be filled with silicone if desired.

4. Hot wells should be separated from cold wells by at least 12" (305 mm) with a flexible expansion joint between wells. Typical design: 1/8" (3 mm) gap between sheet edges, filled with silicone sealant.

There may be situations where the client will not accept exposed expansion joints. In these cases, joints can be covered with PVC "T" molding, flat strips, custom-made Corian® strips, etc. Attach the cover strips with silicone. While the use of expansion joints is highly recommended, it is acceptable to omit this feature if the client refuses to accept it.

If spacing less than 12" (305 mm) is required for adjacent hot/cold cutouts, cover all edges of the adjacent cutouts with NOMEX® insulation per the following chart:

Table 20.10.A

CUTOUT SPACING (edge-to-edge)	TOTAL LAYERS OF NOMEX®
More than 12" (305 mm)	1
6" to 12" (152 mm to 305 mm)	2
Less than 6" (152 mm)	3

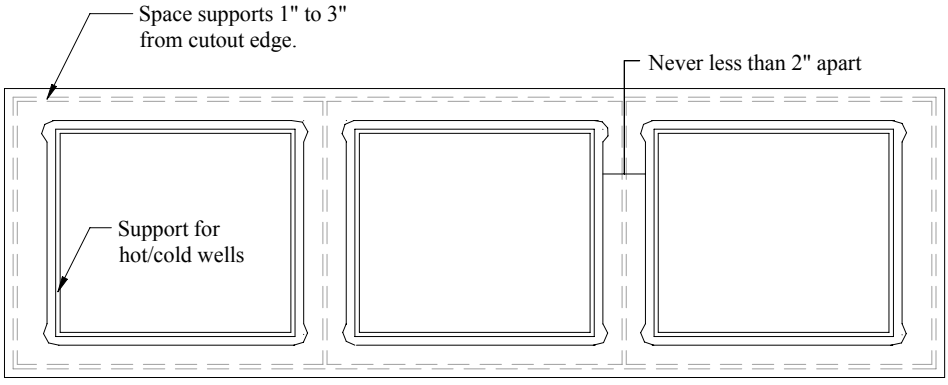


Figure 20.10.A

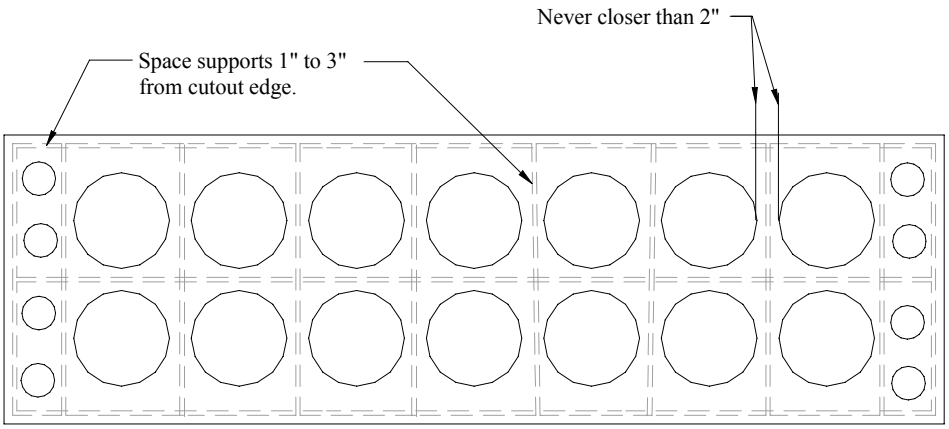


Figure 20.10.B

Food well cutouts should be at least 2” (51 mm) apart. When closer spacing is required, use the stainless steel collar design and eliminate the Corian® web. Add NOMEX® as shown in the chart above. **Do not install tops with Corian® webs between cutouts that are less than 2” (51 mm) in width. See Figures 20.10.A & B.**

Note:

If adjacent cutouts are both the same temperature (i.e., both hot or both cold), they will need only one layer of NOMEX®.

20.11 CHECKLIST

Before starting installation at the job site, there are several items to consider:

1. Have you checked the site for unexpected heating or cooling equipment such as ice pans, overhead lamps, strip heaters, surface heaters, cooking stations, etc.? These add-ons can create temperature conditions that may require special attention including additional insulation, hot pads, expansion joints, temperature isolation, stainless steel collars, etc.
2. Were there any field changes to hole size or spacing, support locations, millwork integrity, equipment designs or capacities, etc., that might change either the temperature or stress patterns in the Corian®?
3. Have you considered where the workers will put new trays of hot food when they refill the installed food trays? If there is a smooth, flat area near the installed food tray, that’s where they are likely to place “just out of the oven” hot trays. You’ll need to plan for a way to keep this extreme heat from damaging the Corian® surface. Consider a hot pad, trivet or steel rods.

4. Are there places where someone is likely to stand on the Corian® top to change light bulbs or advertising signage, to reach overhead cabinets, to take a "shortcut" to the kitchen, etc.? Have you provided adequate support for the Corian® in these places?

After installation, review the following:

5. Are all of the cutouts of high-strength design with corner blocks and insulation?
6. Are all of the food wells properly supported so the weight is not carried by the Corian® countertop? Don't forget cutouts for soup or condiments.
7. Are all seams reinforced and completely filled?
8. Are all edge buildups completely filled? Do all edge inlays match up?
9. Is there adequate clearance between Corian® and other parts so that the Corian® can expand and contract unrestricted?
10. Did you install the sneeze guards, overhead lamps, brackets, etc.? If not, have you provided adequate instruction to have them properly installed without damaging the Corian® top?
11. Do all of the heating pan temperature-control knobs have positive stops to prevent setting the temperatures too high? If not, install them before you leave. Food temperatures should be 160°F–170°F (71°C–76°C) to meet most health department requirements. Heating foods to a boil will dry out the food, waste electricity and cause overheating of the Corian® countertop, resulting in cracking failures. The surface temperature MUST NOT exceed 150° F.
12. Have you left Care & Use instructions for the owner/operator? Have you explained and demonstrated how to clean the Corian® counters?

Installing a Corian® Ready-To-Install One-Piece Vanity Top & Bowl

Corian® One-Piece Vanity Tops & Bowls are ready to install and require only cabinet or bracket support plus drilling of the faucet holes, as per plumbing requirements.

The One-Piece Vanity Top & Bowl can be used for residential and commercial applications.

Residential applications usually only require cabinet support, while commercial applications often require additional support as well. The front skirt needs to be fitted prior to installation.

21.1

RESIDENTIAL APPLICATIONS

Preparation

Inspect installation area and make sure cabinet is secured properly. Unpack vanity and check for shipping damage. (Report any problems to your place of purchase before proceeding further with installation.)

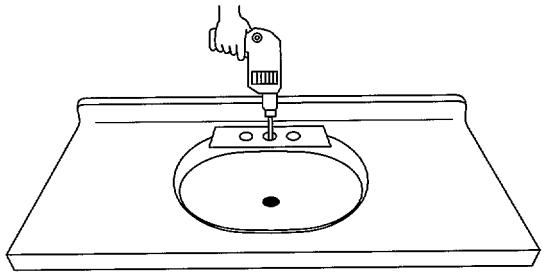
Note:
Follow all manufacturer's instructions and safety information on silicone caulk containers. Ensure adequate ventilation before applying.

Installation

1. Trial-fit vanity top to cabinet and wall. Use a utility knife to cut away interfering drywall as required. If vanity top "rocks," insert a shim beneath "lugs" on underside of vanity top until it is level. Remove vanity top and secure shims to vanity cabinet.
2. If vanity top does not have predrilled faucet holes, drill holes using a 1¼" (31 mm) diameter hole saw bit and paper pattern that comes with faucet hardware (Figure 21.1.A). If you need another paper pattern, determine if faucet hardware has 4" (102 mm) or 8" (203 mm) centers. Then use the appropriate size pattern found at the end of this instruction booklet.

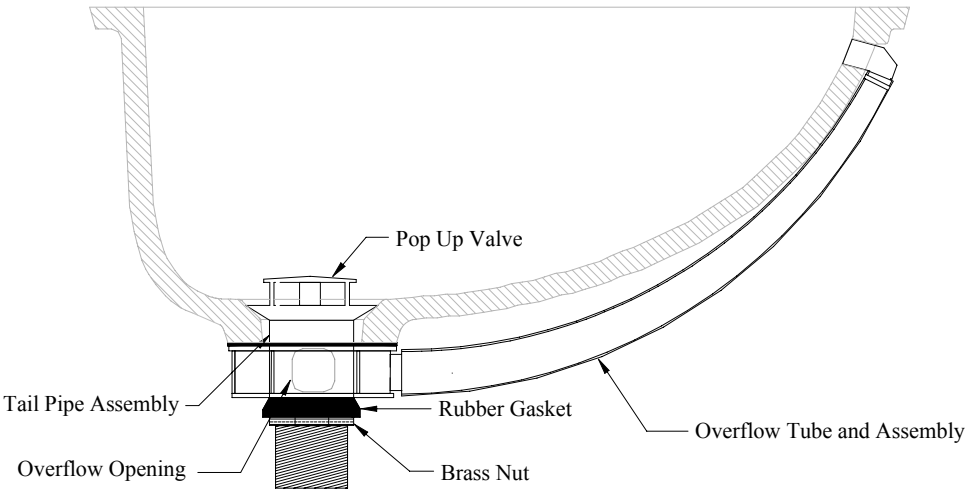
Note:
Before drilling, be sure faucet hardware will fit in recessed faucet deck area. Carefully sand away any chips on the upper and lower edges of each faucet hole.

Figure 21.1.A



3. Before mounting vanity top, install faucets and drain assembly following manufacturer's instructions. If necessary, install the drain overflow assembly as follows:

Figure 21.1.B



In carton, locate plastic bag containing the overflow assembly (Figure 21.1.B).

Begin by aligning the opening in the plastic "donut" with the drain opening. Bend vinyl tube against bowl until it reaches the overflow hole cover attached to the bowl.

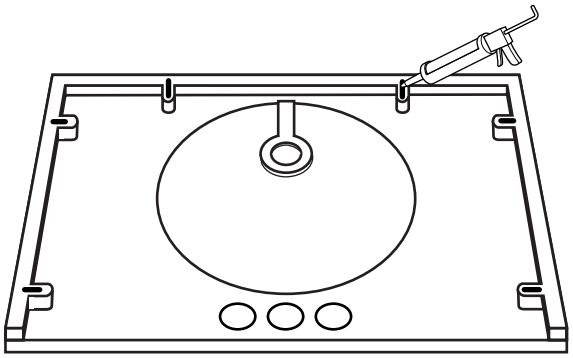
If necessary, carefully cut tube with a sharp utility knife.

Slip tube over pipe nipple on overflow cover. Bend tube against bowl to check that the "donut" rests against drain opening with the black foam seal against the bowl. Wrap wire tie around tube at the top, snug it firmly then trim the excess.

Note:

Vinyl tube must not be kinked or the overflow will not work properly. **Caution: Once tightened by hand, do not tighten drain assembly more than 1/4 turn with a wrench.**

Figure 21.1.C



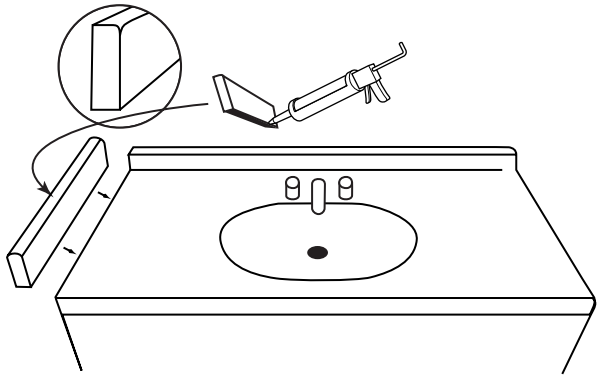
4. Wipe off top of cabinet and bottom of vanity top with a damp cloth to remove dust and dirt, and let dry. Then apply a bead of silicone to the "lugs" on the vanity top where they contact the cabinet (Figure 21.1.C).

5. Carefully place vanity onto cabinet, ensuring that shims are placed as needed.

6. Attach drain pipe assembly. Use clear or color matched silicone to seal drain. **Do Not use plumber's putty**. Hand-tighten nut, then use a wrench or pliers to tighten additional 1/4 turn. **To avoid damaging overflow, do not overtighten.**

7. If side splashes are to be installed, do it now. Notice that there are left and

Figure 21.1.D



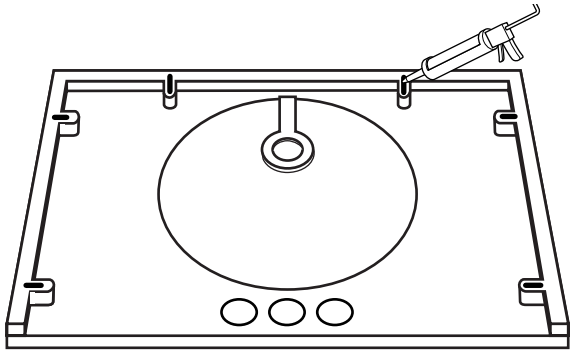
right side splashes. The "rounded over" edge of the splash is the top edge and should face toward the bowl. Clean bottom edge of splash and edge of vanity with denatured alcohol. Then, apply thin beads of silicone to bottom edge and back edge of splash and set splash into place (Figure 21.1.D). Repeat for other splash.

Caulking

1. Apply a fine bead of silicone along joint between side splashes and vanity. Also, caulk along top edge of side and backsplashes to fill gaps between wall and splash (Figure 21.1.E). Remove any excess silicone from wall.

2. Smooth bead with a clean, white rag dampened with denatured alcohol. Then wipe off any excess silicone.

Figure 21.1.E



21.2

COMMERCIAL APPLICATIONS

Steps 1 to 5—apply to the U.S. One-Piece Vanity Top & Bowl.

The following is one of many methods for attaching a skirt to a One-Piece Vanity Top & Bowl. It is not a "required" method. The fabricator is free to choose any method deemed appropriate.

1. Make the required Corian® support brackets from 1/2" (13 mm) scrap material as per Figure 21.2.A. The corner cutout must be made with a router to avoid inside corner stresses. Before glueing the Corian® support brackets, check for square and adjust to requirements (Figure 21.2.B).

Figure 21.2.A

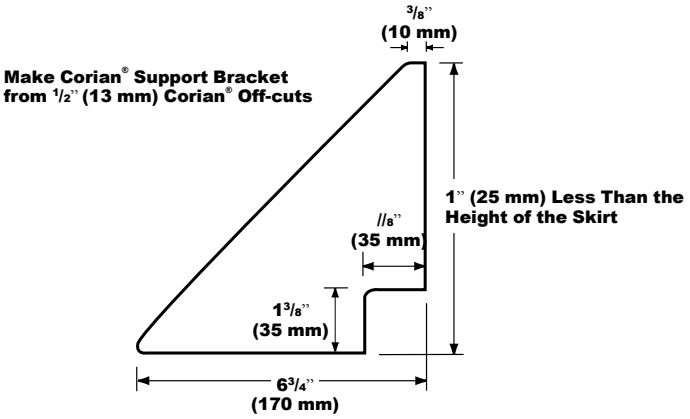
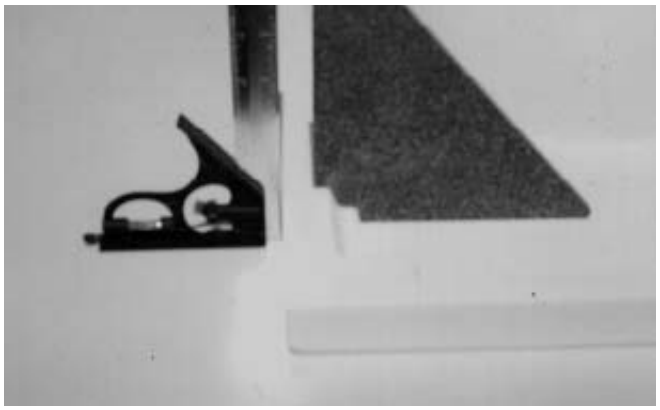
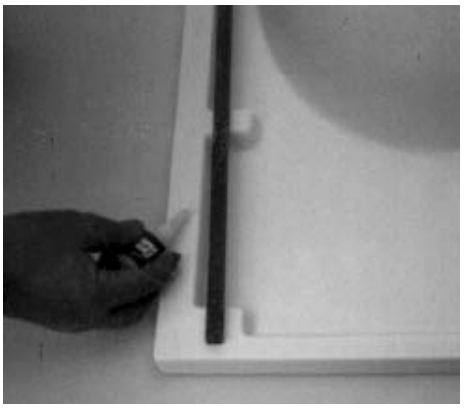


Figure 21.2.B



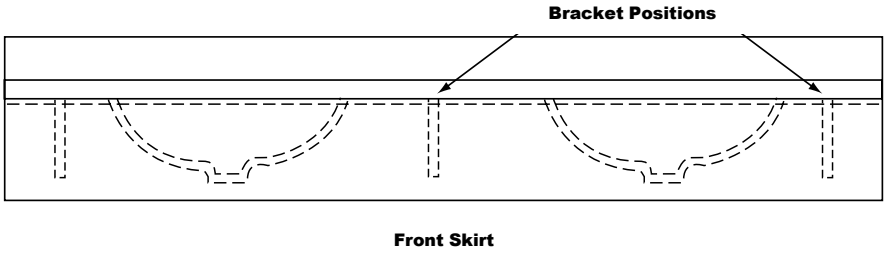
2. Cut a strip of waste Corian® the length of the One-Piece Vanity Top & Bowl unit to be installed. This strip of Corian® should be cut 1/2" x 1/2" (13 mm x 13 mm). Place the vanity unit facedown. Lightly sand the underside of the front edge detail. Use 150-grit paper. Clean thoroughly with a clean, white cloth and denatured alcohol. Set the Corian® strip back from the front edge approximately 13/16" (20 mm). Glue the Corian® strip to the One-Piece Vanity Top & Bowl unit with cyanoacrylate (Figure 21.2.C).

Figure 21.2.C



3. Space the support brackets between the bowls and sand the One-Piece Vanity Top & Bowl unit along the location at which the bracket will be placed. Clean with a clean, white cloth and denatured alcohol. Glue the brackets to the vanity unit with cyanoacrylate (Figure 21.2.D).

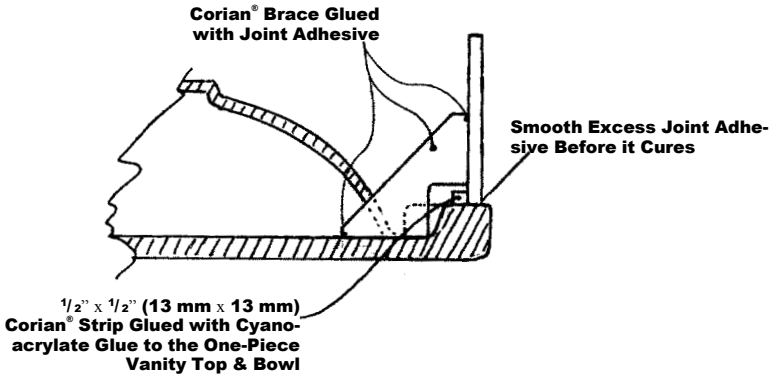
Figure 21.2.D



4. Cut the skirt to the required width. Apply Corian® Joint Adhesive to the edges of the skirt and the Corian® support brackets. Hold in place with dabs of hot-melt glue. Any excess adhesive can be applied to the support bracket as shown (Figures 21.2.E and 21.2.F). Smooth off the Corian® Joint Adhesive on the skirt prior to it fully curing. This completes the installation of the skirt (Figure 21.2.G).

Figures 21.2.E and 21.2.F

Figure 21.2.G


Corian® Brace Glued with Joint Adhesive
Smooth Excess Joint Adhesive Before it Cures
1/2" x 1/2" (13 mm x 13 mm) Corian® Strip Glued with Cyanoacrylate Glue to the One-Piece Vanity Top & Bowl

5. If the Corian® One-Piece Vanity Top & Bowl is to be installed between two walls and requires cutting to size, place the Corian® One-Piece Vanity Top & Bowl face down and cut, using a long-reach radial arm saw or table saw. All saw marks and chips must be sanded out prior to installation.

Please note that when making all measurements, allow a 1/16" (1.5 mm) gap between the vanity top and the wall to allow Corian® to expand and contract.

Note:

For double-bowl One-Piece Vanity Top & Bowls, use a support bracket between bowls. Attach a 1" x 3" (25 mm x 75 mm) strip of wood to the vanity with silicone or panel adhesive. Attach the support bracket to the strip of wood with screws.

Figure 21.2.H

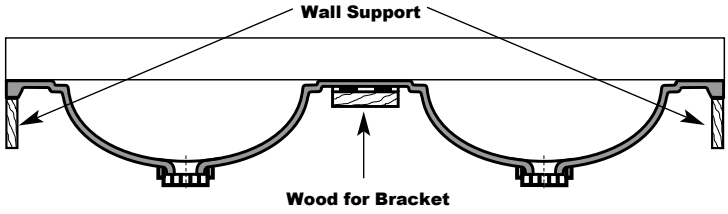


Figure 21.2.I

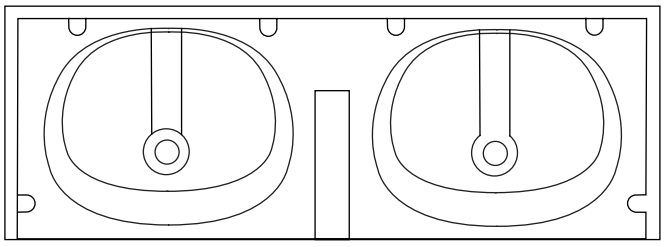
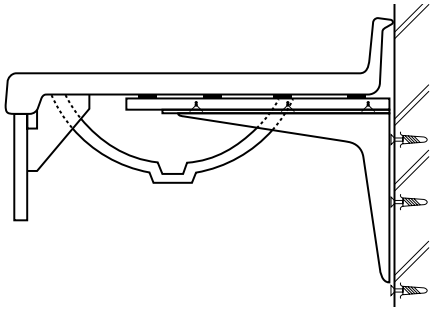


Figure 21.2.J



21.3 EASY ELEGANCE

The Easy Elegance Bath Collection is a pre-made series of vanity tops that come in two versions:

1. Vanity Top with Cutout

2. Vanity Top with Bowls

While the Easy Elegance vanity top is basically a do-it-yourself product, you may be asked to install it. If so, follow the steps as outlined in Section 21.1.

If the installation includes mounting a lavatory, follow the steps as outlined in Section 15.2.2.

22.1 FIREPLACE APPLICATIONS

Corian® can be used in conjunction with fireplaces with the following restrictions:

Facings:

- Corian® is to be used on masonry fireplaces only.
- Do not return the Corian® inside the firebox. Stop the Corian® 1" (25 mm) from the edge of the firebox.
- Adhere the Corian® to the masonry with a good grade of 100% silicone adhesive.

Hearth:

Corian® may only be used as a hearth for a non–wood burning fireplace.

Mantles:

Corian® may be used as a mantle over a fireplace. Be sure that the distance between the firebox and the underside of the mantle conforms to all local and national fire codes.

22.2 WINDOWSILLS

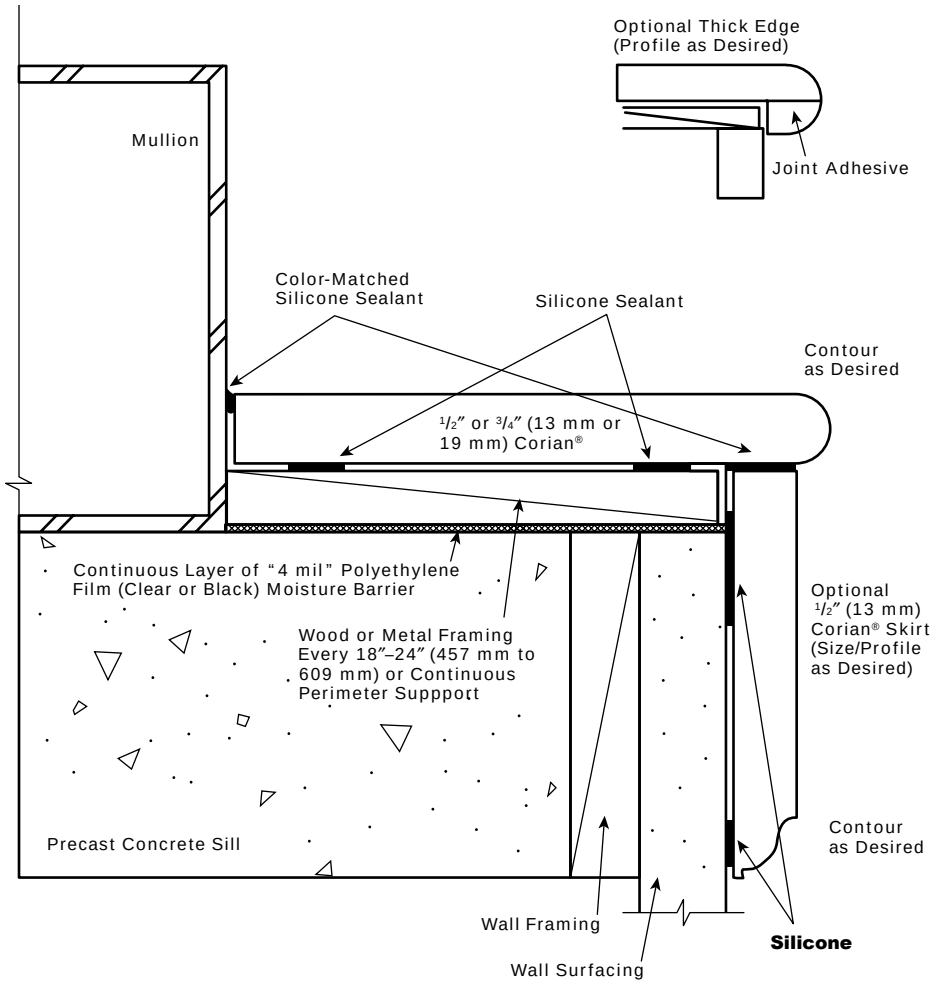
Corian® is an excellent windowsill material. Due to the potential for heat buildup from direct sunlight, allow extra expansion space at either end.

- Determine the space needed from the length of the windowsill. Since Corian® will transmit cold as well as heat, allow $^{1}/_{16}$" (1.5 mm) between the window frame and the windowsill.
- Corian® windowsills must be supported from underneath by a wood frame or solid wood. Attach the windowsill with silicone. Make sure all inside corners have a $^{3}/_{16}$" (3 mm) min. radius.
- If the windowsill is to be seamed, the seam MUST be reinforced

•If the windowsill extends over a countertop and meets the backsplash, use silicone only to seal between the pieces Do Not use joint adhesive to adhere them together as this may restrict movement from temperature changes.

• If installing Corian® windowsills in a commercial situation, follow the specifications as shown in Figure 22.2.A.

Figure 22.2.A



22.3 SHELVES

Corian® can be used for a shelf but the shelf must be fully supported from underneath. Typically, plywood is used. Attach the shelf with a flexible adhesive. See Figure 22.3.A.

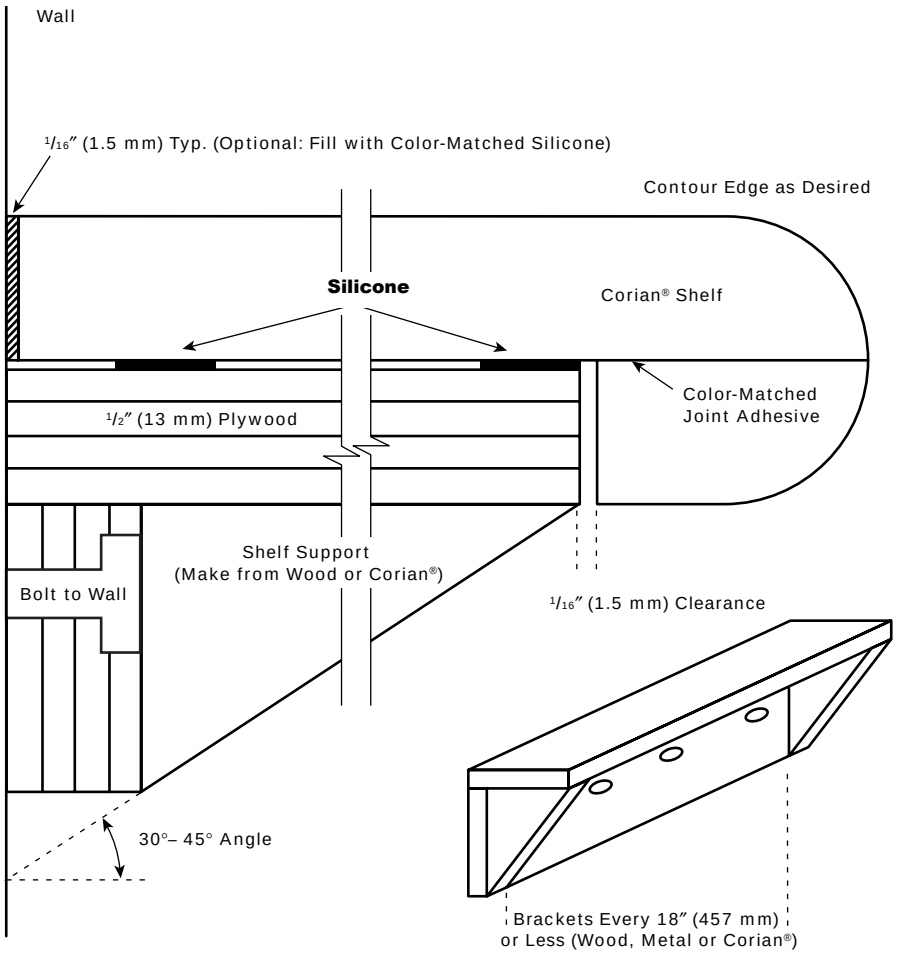


Figure 22.3.A

22.4 INTERIOR STAIRS

Corian® can be used as interior stairs but must be fully supported from underneath. Adhere the stairs with flexible adhesive. See Figure 22.4.A.

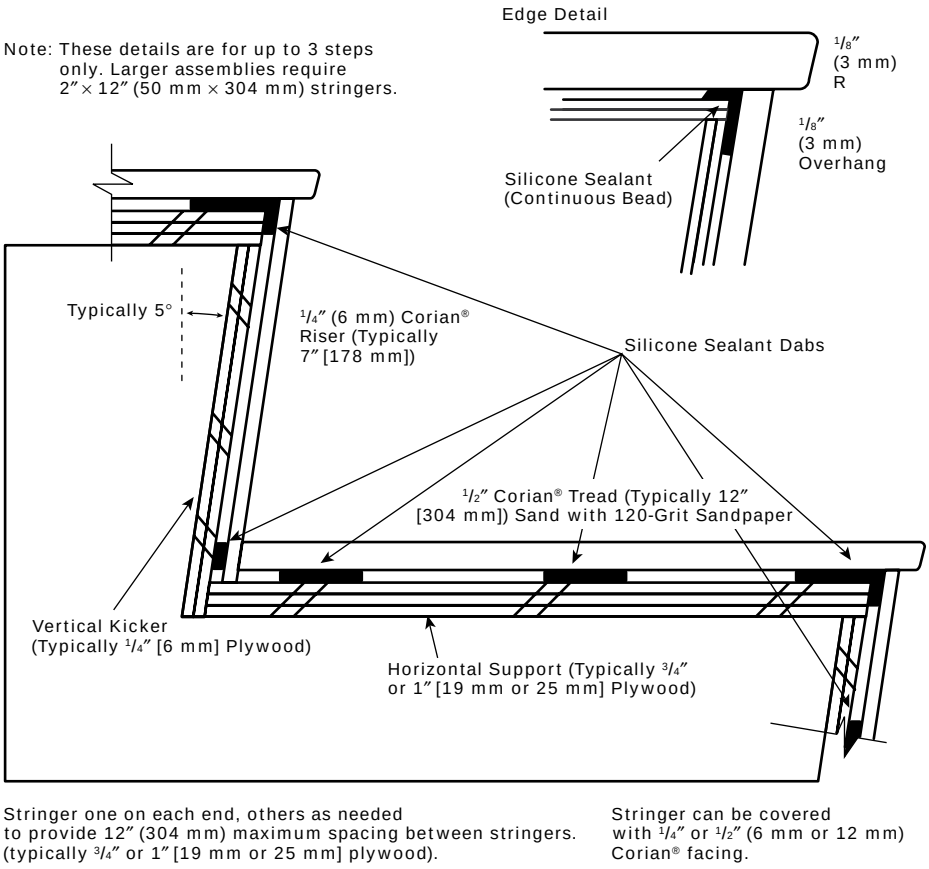

Edge Detail
Note: These details are for up to 3 steps only. Larger assemblies require 2″ × 12″ (50 mm × 304 mm) stringers.
1/8″ (3 mm) R
1/8″ (3 mm) Overhang
Silicone Sealant (Continuous Bead)
Typically 5°
1/4″ (6 mm) Corian® Riser (Typically 7″ [178 mm])
Silicone Sealant Dabs
1/2″ Corian® Tread (Typically 12″ [304 mm]) Sand with 120-Grit Sandpaper
Vertical Kicker (Typically 1/4″ [6 mm] Plywood)
Horizontal Support (Typically 3/4″ or 1″ [19 mm or 25 mm] Plywood)
Stringer one on each end, others as needed to provide 12″ (304 mm) maximum spacing between stringers. (typically 3/4″ or 1″ [19 mm or 25 mm] plywood).
Stringer can be covered with 1/4″ or 1/2″ (6 mm or 12 mm) Corian® facing.

Figure 22.4.A

22.5 USING TILE WITH CORIAN®

Ceramic tile may be used in several ways with Corian®. As a decorative inlay, rout out the Corian®. When used where heat is present, rout out the entire area underneath and install the tile using typical tile installation procedures. See Figure 22.5.B.

Decorative Tile Inlays

- Rout area to a depth of 1/8" (3 mm).
- Use silicone to install tiles.
- Use silicone as grout between the tiles and the Corian®.

Tile Borders Around Cooktops

When used as a cooktop cutout border, remove the Corian® underneath to prevent heat-related problems. See Figure 22.5.A.

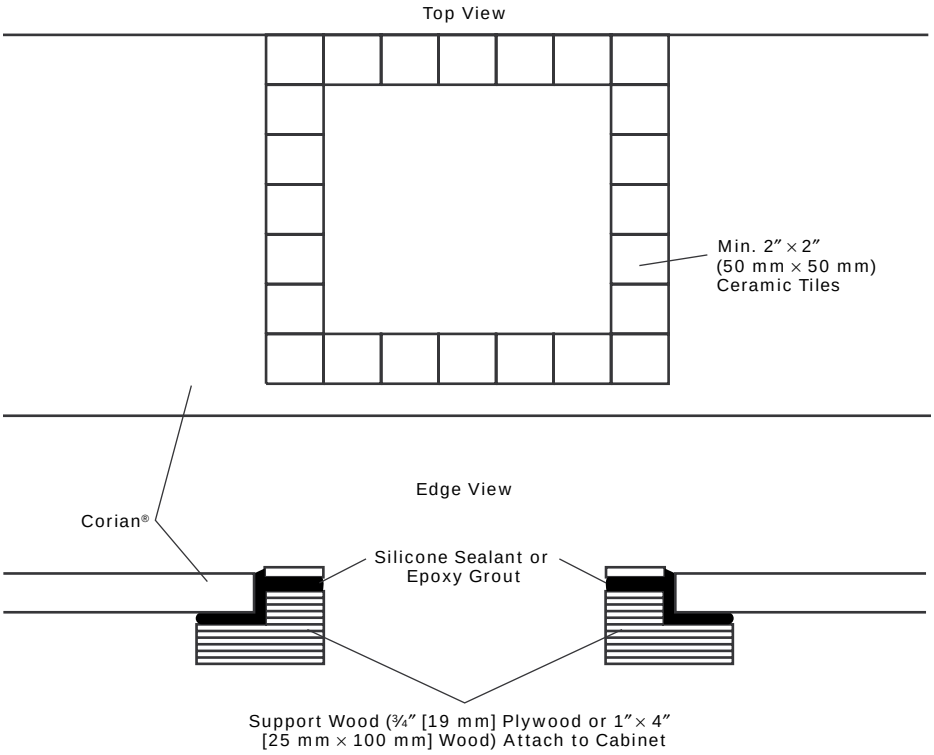

Top View
Min. 2″ × 2″
(50 mm × 50 mm)
Ceramic Tiles
Edge View
Corian®
Silicone Sealant or
Epoxy Grout
Support Wood (¾″ [19 mm] Plywood or 1″ × 4″
[25 mm × 100 mm] Wood) Attach to Cabinet

Figure 22.5.A

- Rout out cooktop cutout large enough to accommodate tile and support to be used.
- Install wood support. Tie into cabinets.
- Install Corian® countertops as usual.
- Install tiles on wood support using typical tile installation procedures.
- Grout between tiles.
- Seal between tile and Corian® with silicone.

Tile Hot Pads

If tile is installed near the cooktop to be used as a hot pad, rout out the area beneath the tile to prevent future heat related problems. See Figure 22.5.B

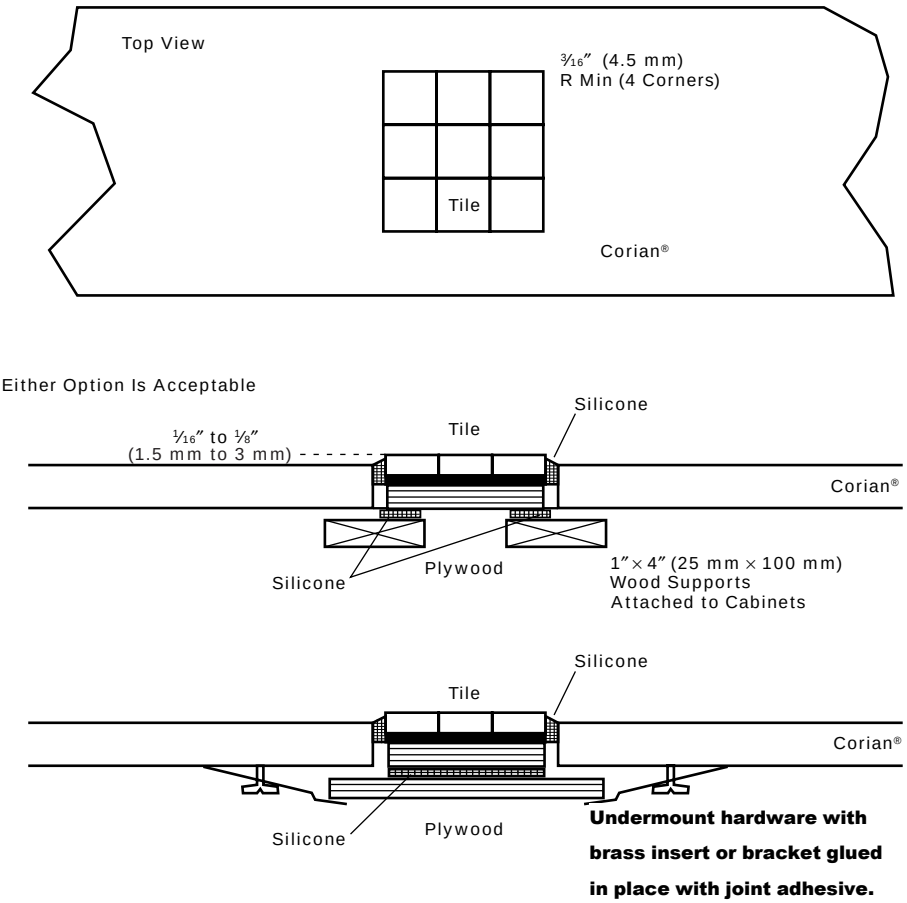


Figure 22.5.B

- Determine size of hot pad.
- Rout out countertop. Allow 1/16" (1.5 mm) on all sides of hot pad for expansion.
- Install support to hold up hot pad.
- Install tiles on desired substrate using typical tile installation methods.
- Center tile hot pad in cutout and install with surface of tile being a minimum of 1/16" (1.5 mm) above the surface of the countertop.
- Seal around hot pad using silicone.

22.6 OUTDOOR FURNITURE

Note: Outdoor applications of Corian® are **not** covered by the DuPont 10 year limited Residential Warranty.

Corian® can be used as outdoor furniture. Any color can be used, but light colors are preferred for outdoor use.

Colors may fade after long exposure to direct sunlight; however, the color may be restored by rubbing the surface with a green Scotch-Brite® pad. Extreme cases may require sanding.

Do not rigidly adhere Corian® to the furniture frame. Be sure to allow for the extra expansion of the Corian® due to heat buildup from exposure to the sun. If mechanical fasteners are required, use rubber grommets around each fastener to allow for expansion.

22.7 STAINLESS STEEL TRIVET RODS

Stainless steel rods can be used near a cooktop as a trivet to place hot pots or pans from the oven or from the stove top. The rods can be used both commercially (see Figure 22.7.A) and residentially (see Figure 22.7.B). The rods must provide a minimum of 1/4" (6 mm) space between the top of the rods and the countertop.

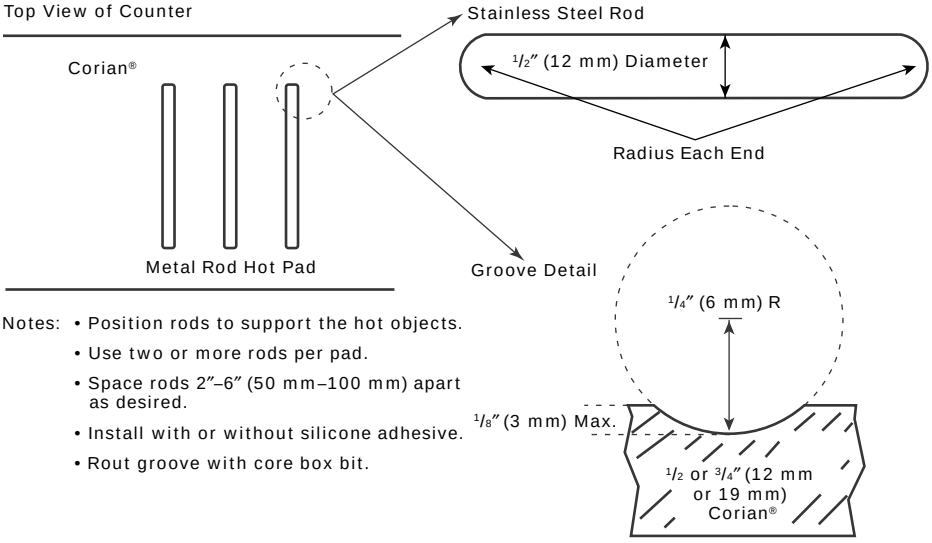
Note:

Trivet rods are not to be used under heat-generating appliances such as toaster ovens or electric frying pans.

OTHER APPLICATIONS

STAINLESS STEEL TRIVET RODS

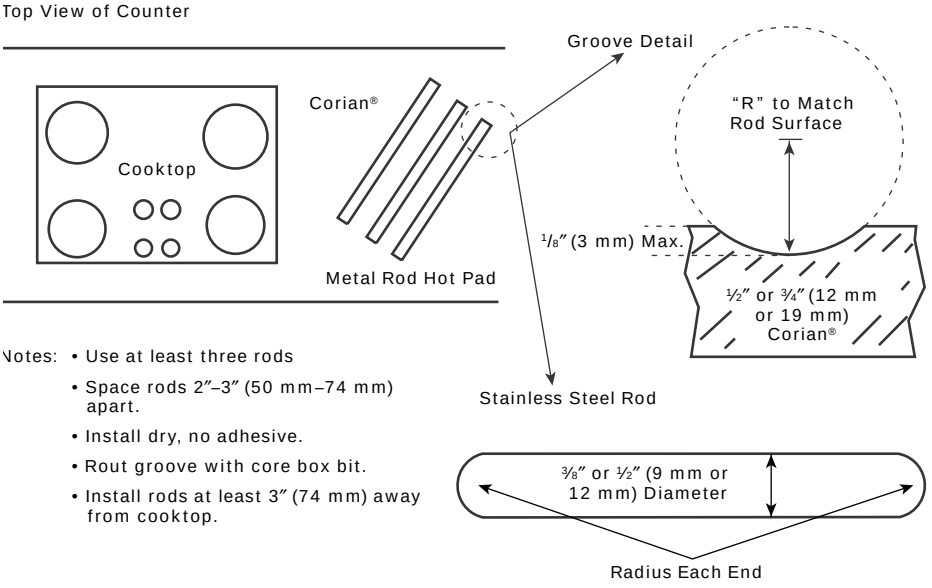
Commercial



Notes:
- Position rods to support the hot objects.
- Use two or more rods per pad.
- Space rods 2″–6″ (50 mm–100 mm) apart as desired.
- Install with or without silicone adhesive.
- Rout groove with core box bit.

Figure 22.7.A

Residential


Top View of Counter
Cooktop
Corian®
Metal Rod Hot Pad
Groove Detail
"R" to Match Rod Surface
1/8″ (3 mm) Max.
1/2″ or 3/4″ (12 mm or 19 mm) Corian®
Stainless Steel Rod
3/8″ or 1/2″ (9 mm or 12 mm) Diameter
Radius Each End

Notes:
- Use at least three rods
- Space rods 2″–3″ (50 mm–74 mm) apart.
- Install dry, no adhesive.
- Rout groove with core box bit.
- Install rods at least 3″ (74 mm) away from cooktop.

Figure 22.7.B

STEPS TO COMPLETION:

1. Select rods and have them cut to size. Have ends rounded off to same radius as the rod.
2. Use a core box bit to rout grooves into deck 1/8" (3 mm) deep.
3. For residential applications, lay in rods. For commercial applications, adhere rods in place using silicone.

22.8 DRAINERS

Drainers, commonly know as drainboards, can be functional as well as decorative. The functionality, however, should be limited to using the drainer to catch water from draining dishes, pots, pans, etc. The surface tension between water and Corian® is high, therefore, water does not drain easily from Corian®.

Drainer designs are virtually unlimited, but there are a few restrictions:

- The maximum depth of any routed area is 3/16" (5mm), unless the area beneath is reinforced with a full piece of Corian® the same thickness as the deck.
- Drainers can not be used with self-rimming sinks.

23.1 MINOR REPAIRS

Minor repairs may be required in the factory or in the customer's home. You may wish to visit the customer to determine if the problem is warranty-related. If so, direct the customer to call DuPont Corian® at 1-800-4-CORIAN (1-800-426-7426) to begin the claim process.

Minor repairs may be required for damage such as:

- deep scratches
- chemical stains
- scorches or burns
- general stains
- minor impact marks

All minor damage should be repaired with a light abrasive cleaner and a Scotch-Brite® pad or, for heavier damage, light sanding.

STEPS TO COMPLETION:

1. Identify the extent of the damage and ascertain whether a minor repair will rectify the problem.

2. Begin repair by attempting to remove damage with an abrasive cleaner or a Scotch-Brite® pad.

3. If Step 2 is unsuccessful, it may be necessary to hand-sand with 400-grit wet and dry paper. Wet surface before starting, to keep down dust.

4. If Step 3 is unsuccessful, use an electric sander and heavier-grit paper. Always make provisions to control dust.

5. If Step 4 is unsuccessful, it may be necessary to consider other repair options.

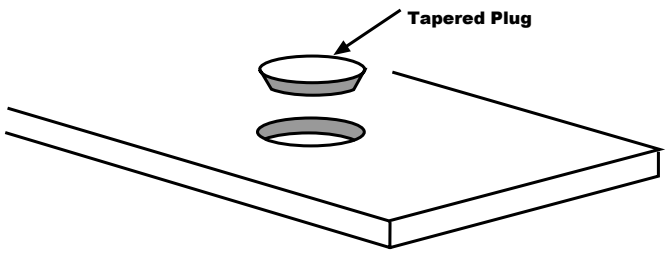
23.2 PLUG REPAIRS

Plug repairs are a simple and effective way to replace a small section in a countertop which may have been damaged and cannot be refurbished using a minor repair technique.

The plug repair removes a small circular section which is replaced with a color-matched piece of Corian® using similar techniques to an inlay.

This piece is then glued with Corian® Joint Adhesive to form a smooth repair

Figure 23.2.A



The Round Plug System

STEPS TO COMPLETION:

Note:
System will only work with a plunge router. For safety purposes, it is best to fasten router to an oversized baseplate made of plywood or 1/4" (6 mm) Corian®. For best results, use a color-matched Corian® to make repair plug.

1. Determine which router bit pair is needed to remove the damage.

2. Insert plug cutter bit into plunge router. Set router to plunge to within about 1/32" (.79 mm) of the entire thickness of a color-matched Corian® sheet. Fasten router onto the backside of the piece. Plunge router slowly until router reaches full depth. Remove router.

3. Remove plug from rest of sheet and carefully sand off the flash around the top of the plug.

Note:
The flash around the top of the plug is very sharp and will cut fingers easily. Clean plug with denatured alcohol.

4. Insert bevel bit into plunge router and set plunge depth to about 7/16" (11 mm). Fasten router securely over damaged area. Plunge router slowly until all damage is removed and router reaches full depth. Do not remove router at this time. Trial-fit plug into hole. Set router deeper if necessary, and rerout opening until plug sits about 1/32" (.79 mm) above deck. Clean hole with denatured alcohol. Remove router.

5. Seal underside of deck with aluminum tape. Prepare the Joint Adhesive for DuPont Corian®, and squeeze adhesive into opening and coat edges of plug. Insert plug into opening, press down firmly and secure.

6. After adhesive sets, use a router on skis or a direct drive random orbital sander to remove excess plug and adhesive. **Do not overheat the repair.** Finish the repair as usual.

23.3 PIE-CUT REPAIRS

This insert repair method is a quick, inexpensive alternative to replacing an entire Corian® countertop. Use the following procedure to fabricate and install pie-shaped inserts of Corian® for repairing cracks in cutout corners and edges. There are commercially available templates for making pie repairs. Or the fabricator can make templates as described below.

Figure 23.3.A

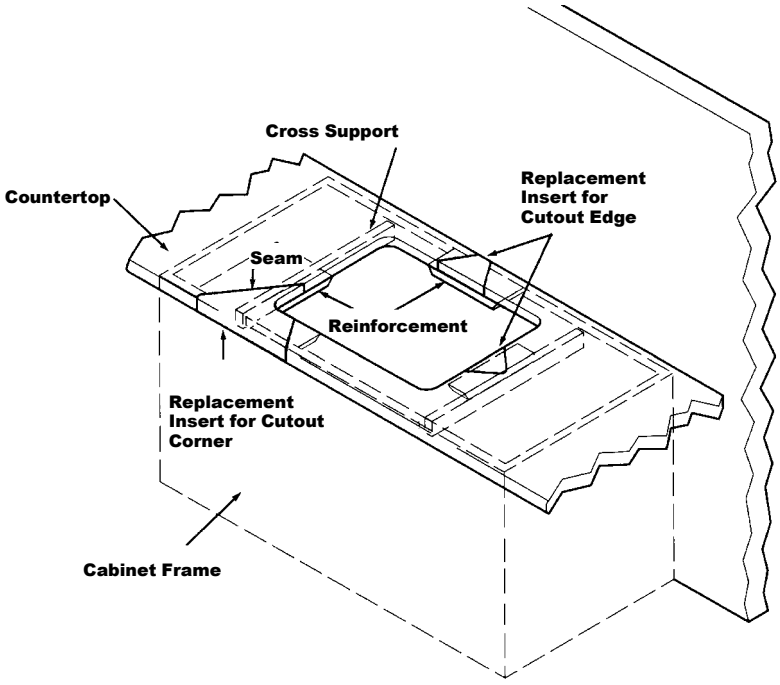
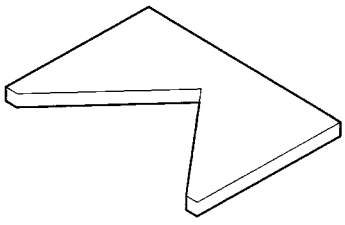


Figure 23.3.B

1. Make the Template

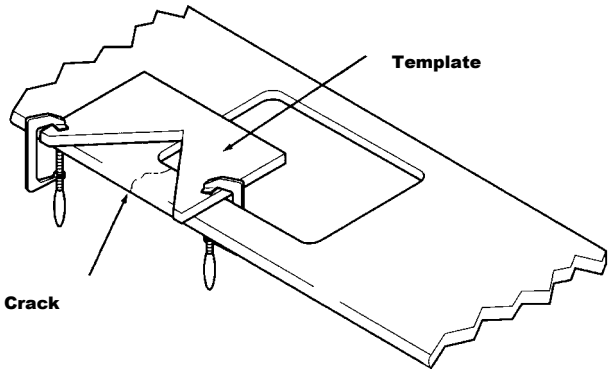
- Make a pie-shaped template, matching the size to the piece to be repaired.



2. Remove the Damaged Cutout Area

- Clamp the template on the countertop over the area to be removed.

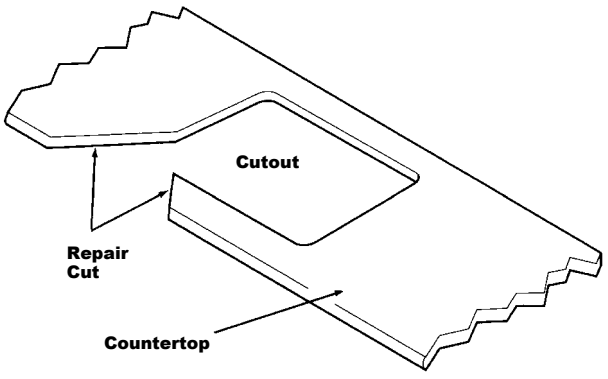
Figure 23.3.C



- Use a router to cut out the damaged area.
- Make sure the cuts are at least 4” (102 mm) away from the cutout corner. For an edge repair, if this is not possible, remove the cutout corner too, making the template big enough to encompass it.

Note for buildup edges:
It is not necessary to remove the buildup edge if it is not damaged.

Figure 23.3.D



3. Make the Insert

- Choose a waste piece of Corian® that is the same color and thickness as the countertop.
- Use the same router and template to make a pie-shaped insert of Corian®.
- Make the insert 1/16" (1.5 mm) to 1/8" (3 mm) wider than the repair cut in the countertop.

Note for buildup edges:

For a countertop with a damaged buildup edge, fabricate a buildup section and glue it to the front edge of the replacement insert before routing it to a pie shape.

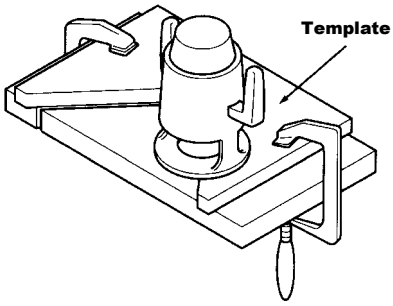


Figure 23.3.E

4. Trial-Fit the Insert Until There Are No Visible Gaps

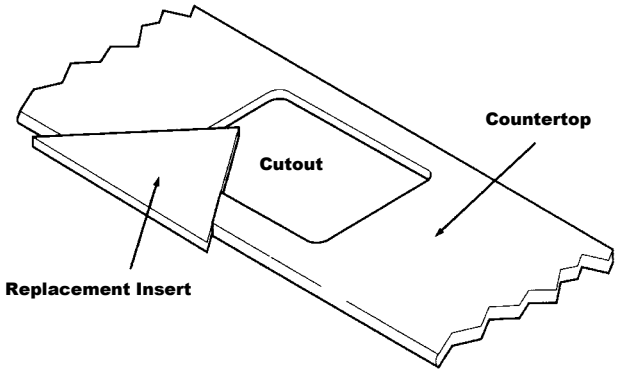


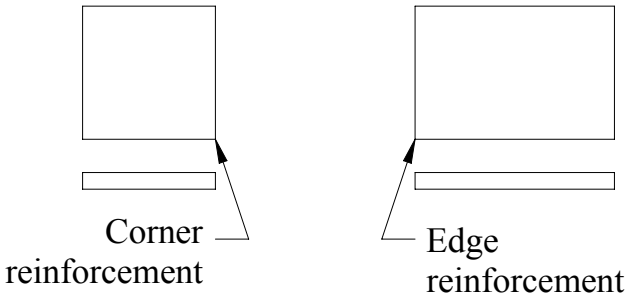
Figure 23.3.F

5. Reinforce the Insert and the Seams According to the Following Procedures

Cut the Reinforcement Block

- Cut a reinforcement block from Corian®, making it at least 2" (51 mm) wider than the repair insert.

Figure 23.3.G



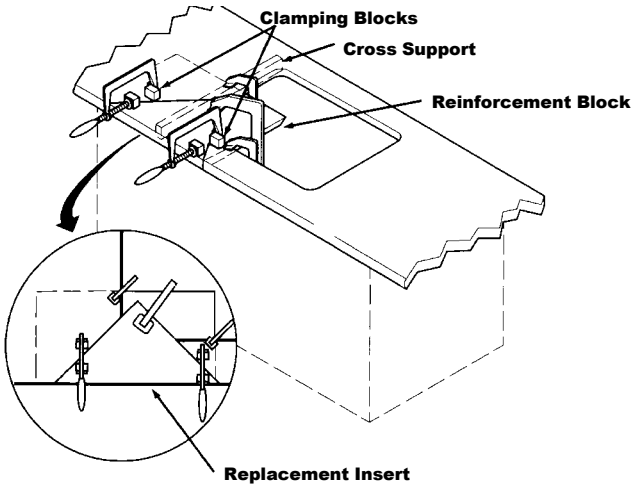
Trial-Fit the Reinforcement Block and the Insert

- Slide the reinforcement block against the cabinet frame and clamp it to the countertop.
- Slide the insert against the repair cut.
- Make four small blocks from Corian® and use hot-melt glue to attach them to both sides of each repair cut.
- Use C-clamps to draw each pair of blocks together.
- Clamp the insert to the reinforcement block.

Note for buildup edges:

For an insert with a buildup edge, trim the front edge of the insert flush with the countertop. Remove the insert and finish the end section with a decorative matching pattern.

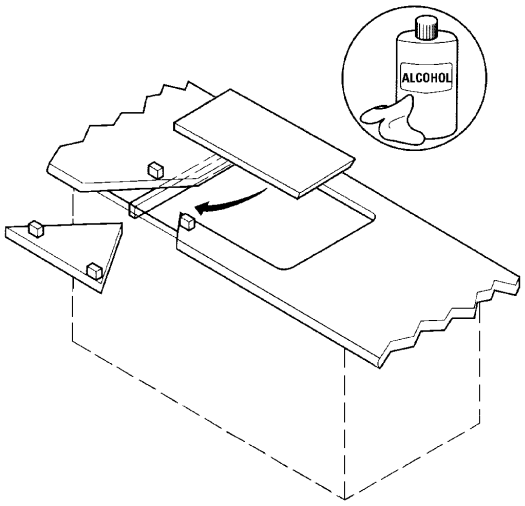
Figure 23.3.H



Prepare the Seam

• Clean the seam areas of both the insert and the reinforcement block with clear, denatured alcohol and a clean, white cloth.

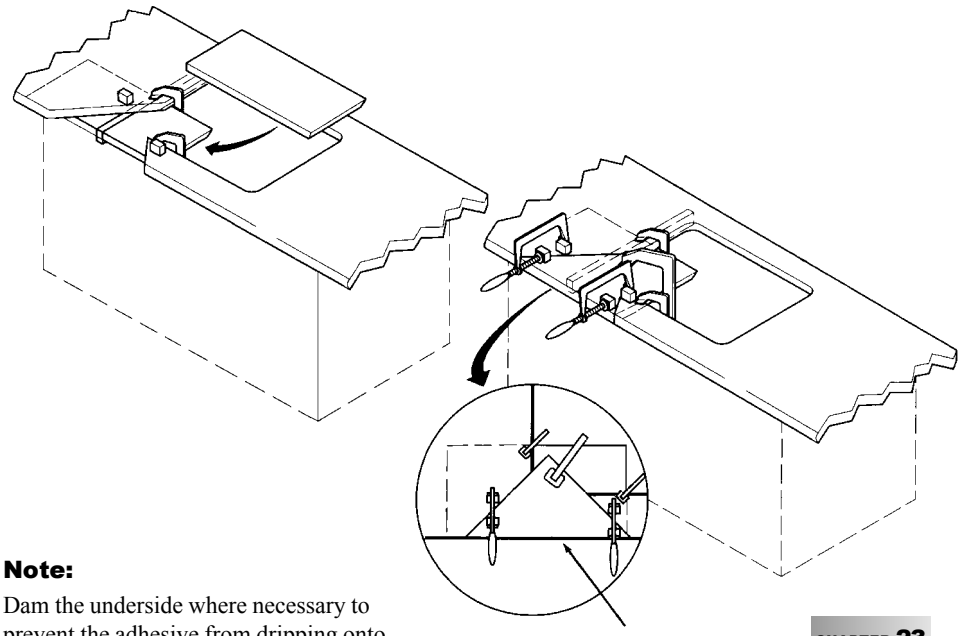
Figure 23.3.I



Glue the Pieces

• Apply a thick layer of the Joint Adhesive to the entire surface of the reinforcement block, avoiding any gaps.
• Clamp the reinforcement block to the underside of the repair cut.
• Apply Joint Adhesive to the edges of the insert.
• Slide the insert against the repair cut and clamp it on both sides of each cut.
• Clamp the insert to the reinforcement block.

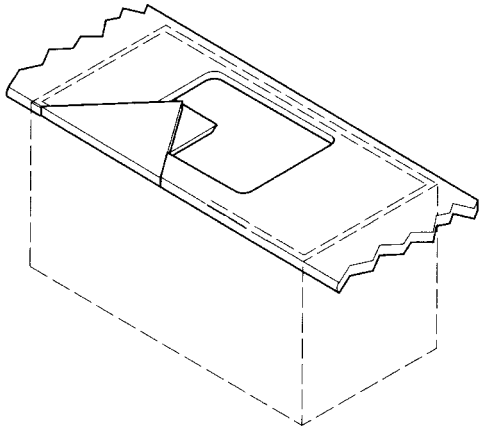
Figure 23.3.J



Note:
Dam the underside where necessary to prevent the adhesive from dripping onto the floor or cabinet.

- Allow the adhesive to cure.
- Remove the four blocks and hot-melt glue using a 1" (25 mm) chisel with rounded corners.

Figure 23.3.K



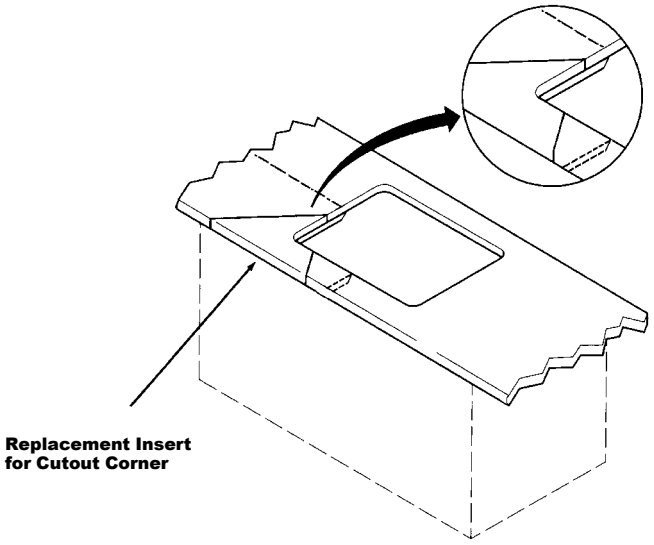
6. Finishing the Insert

- Trim the repair section along the cutout edge with a router, using a template as a guide.
- Sand smooth with 60µ abrasive film or finer to match the gloss of the countertop.

Note for buildup edges:

Use a shaped router bit to finish a buildup edge.

Figure 23.3.L



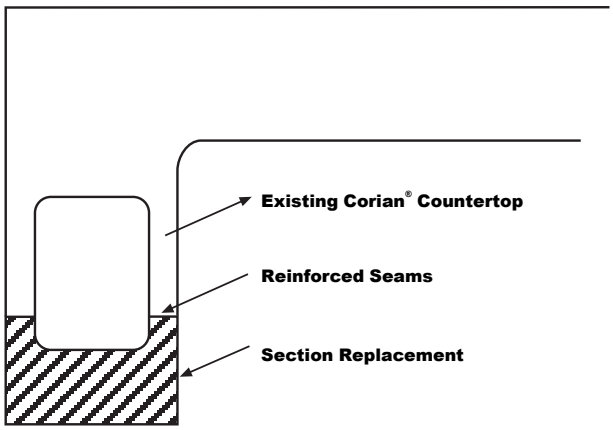
23.4 SECTION REPLACEMENT

A section replacement may be required where no alternative repair technique, such as a plug repair or pie-cut, will rectify the damaged section.

It is important to ensure that color-matched material is used for the replacement, if possible. If not possible, explanation before the repair is attempted is required.

The section replacement removes a complete section of the countertop from buildup to wall.

Figure 23.4.A



STEPS TO COMPLETION:

1. Using a 3-hp router fitted with a special router bit that enables a cutaway underneath tiles or other impediments at the rear of the countertop, rout a straightedge line from front edge to rear.

2. If required, repeat Step 1 to create the section to remove.

3. Carefully remove silicone, adhesives or other attachments to the cabinets.

4. Remove the entire section to be replaced, including the frame.

Note:
If it is possible to remove only the damaged Corian®, leave the subframe intact.

5. Re-fabricate the new section to be replaced to match the existing countertop. Duplicate all details to ensure uniformity of appearance.

6. Trial-fit the new section to the existing, ensuring good support and level are maintained and that close attention is paid to getting a fine fit at the seam.

7. Re-seam the new piece with Corian® Joint Adhesive and clamp with deck clamps or other methods that will obtain a first-class seam.

8. After the adhesive has set, use standard methods to remove the excess adhesive on the countertop and buildup seam.

9. Finish the area, using standard procedures for finishing. Finish the entire top to remove stains and scratches, ensuring the repair achieves a "new" look.

Helpful Hints:

If you don't have the exact router bit to match the existing edge treatment, use a slightly bigger bit that will override the former profile.

If the color match cannot be exact, the position of the seam may be disguised by placing a "camouflage" over it such as inlayed heat bars, a tiled inlay or other creative techniques.

In more difficult instances, it may be appropriate to suggest a color contrast in place of a poor color match.

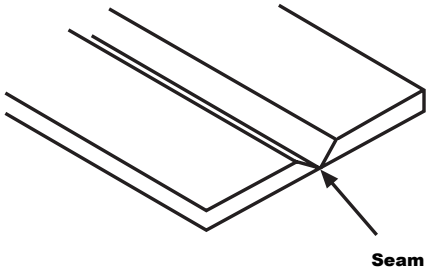
In some cases, it is possible to use material from another section of the installation, such as an island countertop, to get a color match, and use new material for the disjointed section.

23.5 REPAIR CRACKED SEAMS WITH INSERTS

• Rout the seam area using a router, "V" groove bit and straightedge.

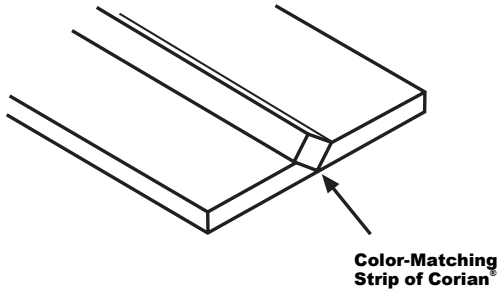
Note:
If the repair must be made close to the backsplash, use a rectangular slot and rectangular repair strip. Use a tilt-base laminate trim router to slot the cracked top near the backsplash. The repair strip can be any width needed to remove all damage. Sand the strip so the top width is larger than the bottom width to improve the fit.

Figure 23.5.A



- Cut a color-matching strip of Corian® and sand it to fit the "V" groove snugly.
- Clean all surfaces with clear, denatured alcohol and a clean, white cloth and allow to dry.

Figure 23.5.B



- Apply Joint Adhesive for DuPont Corian® liberally onto the "V" groove. Install the repair strip.
- Install a reinforcing strip under the seam to prevent re-cracking (see "Reinforced Seams," Section 10.3). Be sure the reinforcement overlaps the repair at least 1" (25 mm) on each side.

Figure 23.5.C

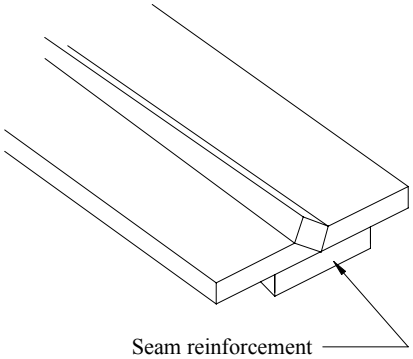
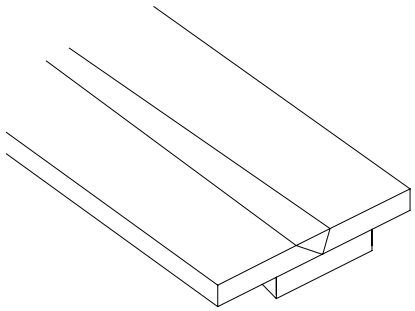


Figure 23.5.D

- Let the adhesive cure, then sand smooth.



23.6 REPAIR LARGE AREAS WITH CORIAN® INLAYS

Commercially made templates are available to make this repair. Or the fabricator can make the templates as outlined here.

STEPS TO COMPLETION:

- Rout a pattern out of plywood or M.D.F., making it 3/8" (10 mm) smaller than the piece to be bevel-mounted.

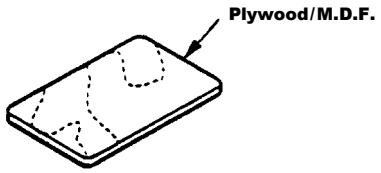


Figure 23.6.A

- Secure another plywood or M.D.F. piece to the work station.
- Screw the pattern to the plywood or M.D.F.
- Rout (counterclockwise) a matching template set with a 1/4" (6 mm) bit and 1" (25 mm) template guide.

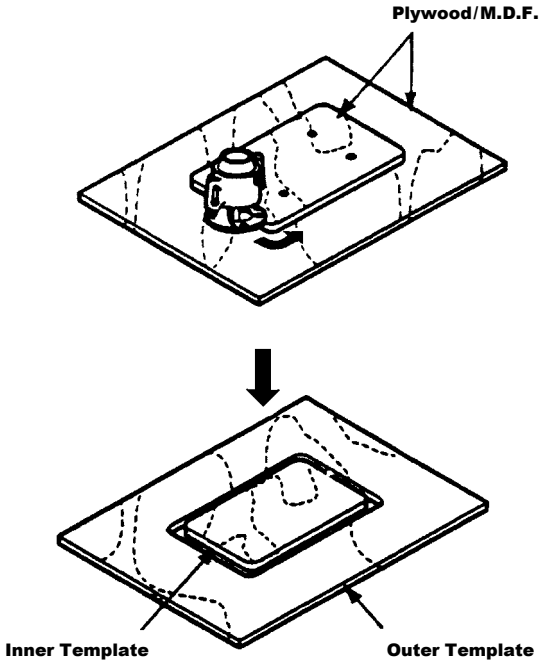
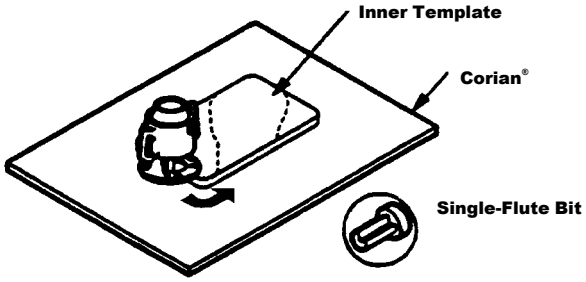


Figure 23.6.B

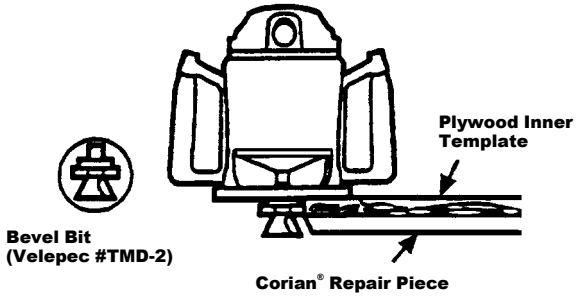
• Clamp the inner template to the Corian® or use hot-melt glue.
• Rout (counterclockwise) a repair piece to size with a 3/8" (10 mm) bit and a 1" (25 mm) template guide.

Figure 23.6.C



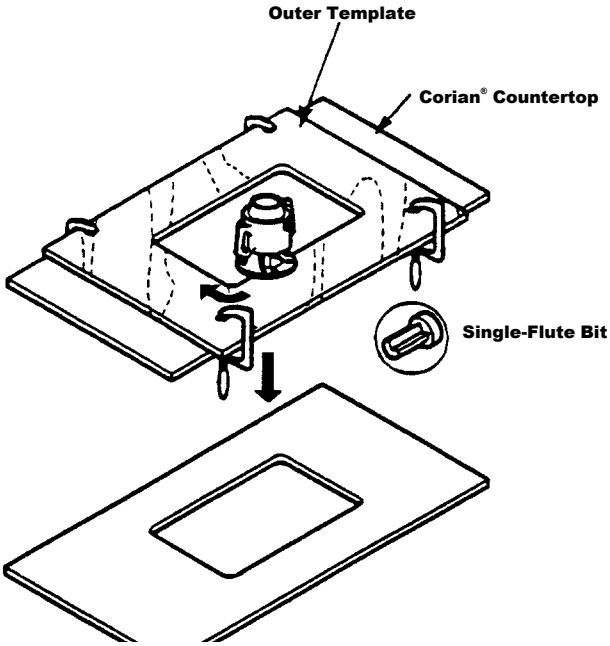
• Rout the bevel into the repair piece with a reverse-angle bit. Set center of roller bearing to center of template edge.

Figure 23.6.D



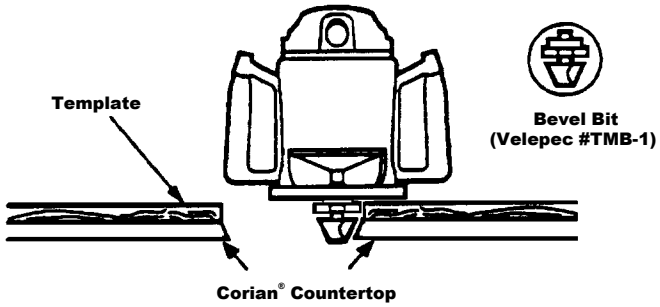
• Rout the countertop using the outer template, 3/8" (10 mm) bit and a 1" (25 mm) template guide.

Figure 23.6.E



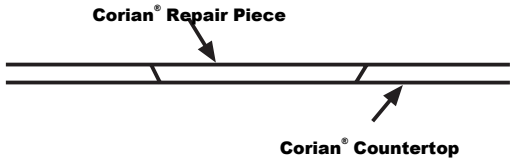
• Rout a bevel in the countertop using the matching bevel bit. Start with roller bearing at upper edge of template.

Figure 23.6.F



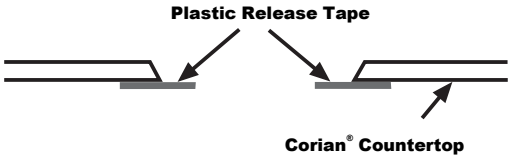
• Trial-fit and adjust.

Figure 23.6.G



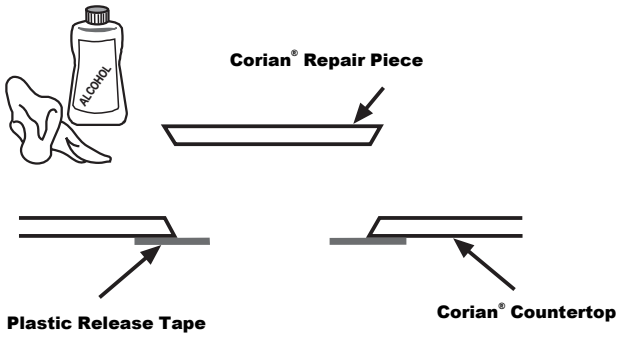
• Tape the underside of the countertop with plastic release tape.

Figure 23.6.H



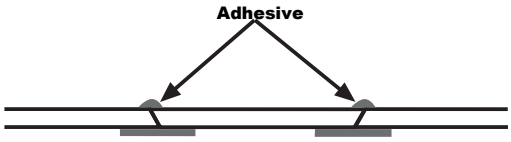
• Clean all edges with clear, denatured alcohol and a clean, white cloth.

Figure 23.6.I



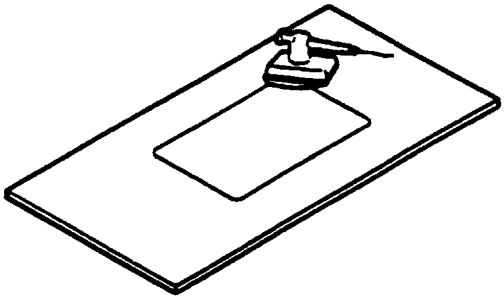
• Apply Joint Adhesive for DuPont Corian® to all edges. Install the repair piece.

Figure 23.6.J



• Let the adhesive cure; then sand to match the surrounding surface.

Figure 23.6.K



23.7 BOWL REPLACEMENT

Removing Undermount Bowls:

1. Remove all plumbing hardware.

2. Cut the silicone bead between the bowl and the sheet using a stiff putty knife, and remove the undermount hardware. Remove the bowl.

Removing SUB and ITB Bowls:

1. Hang drop cloths to control dust.

2. Support the bowl to prevent movement.

3. Make a template by clamping $^{1}/_{2}$" (13 mm) plywood over the damaged bowl and routing to the shape of the bowl using a flush-cutting laminate trimmer bit. Leave the template on the bowl.

4. Use a min. 3-hp router and Velepec bit #CPC 187-8*. Adjust the bit to cut $^{1}/_{32}$" (.79 mm) below the bottom surface of the sheet. Slowly cut through the bowl, moving the router around the bowl in a clockwise direction. Avoid tipping or rocking the router to ensure a clean, smooth cut. If the bowl is not completely loose, use a small hammer and stiff putty knife to cut away any remaining material. Remove the bowl.

5. Raise the bit $^{1}/_{32}$" (.79 mm). Re-rout counterclockwise, flush with the bottom of the sheet.

Note:
Some installations require a router that can get close to the back wall. Several manufacturers sell routers specifically for this purpose (see Chapter 28).

Removing "A" Mount Bowls:

1. Hang drop cloths to control dust.

2. Support the bowl to prevent movement.

3. Clamp the proper "A" template over the damaged bowl. Align the template accurately to ensure good alignment of the new bowl.

Note:
The rear edge of the template may require narrowing to clear the backsplash.

4. Rout a new hole into the worktop using a router with a narrow baseplate, such as a DeWalt Model DW625 or a Bosch Model 1615. This removes the old bowl and creates the opening for the new bowl.

Installing New Bowls:

1. Preparations must be made to install an "S" mount bowl. This may entail a partial replacement of the countertop.

2. When replacing a SUB bowl, trim the flange to a $^{7}/_{8}$" (22 mm) width before installing the new bowl. Use aluminum tape around the top edge of the bowl to prevent joint adhesive from running down onto the inner surface of the bowl. This will save finishing time. The clamping technique shown in Figure 15.3.D is the best for SUB replacement in the field.

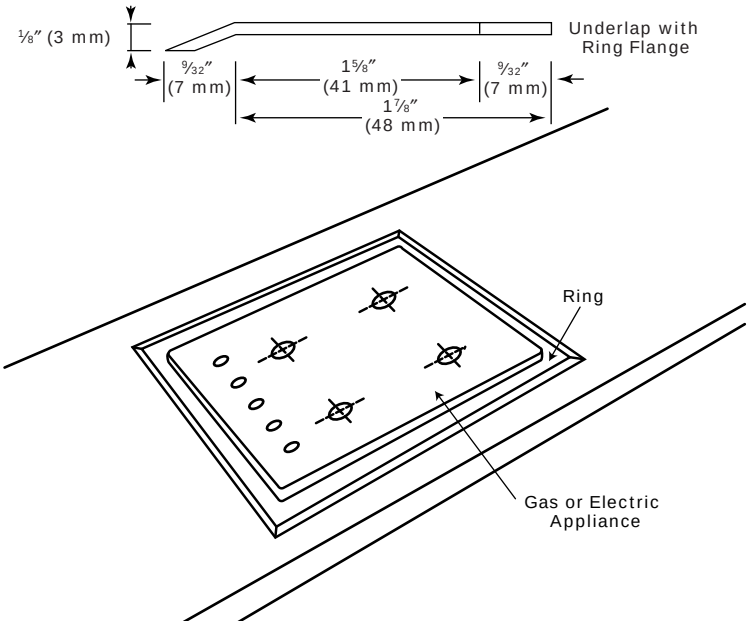
*Router bit #CPC 187-8 is available from:
Fred M. Velepec Co., Inc.
71-72 70th Street
Glendale, NY 11385
Phone: 718-821-6636
Fax: 718-821-5874

23.8 INSTALLING STAINLESS STEEL COOKTOP RING

By using a specially designed stainless steel ring, the cooking appliance can be installed in a manner that will provide more space and greatly improved insulation between the appliance and the Corian®.

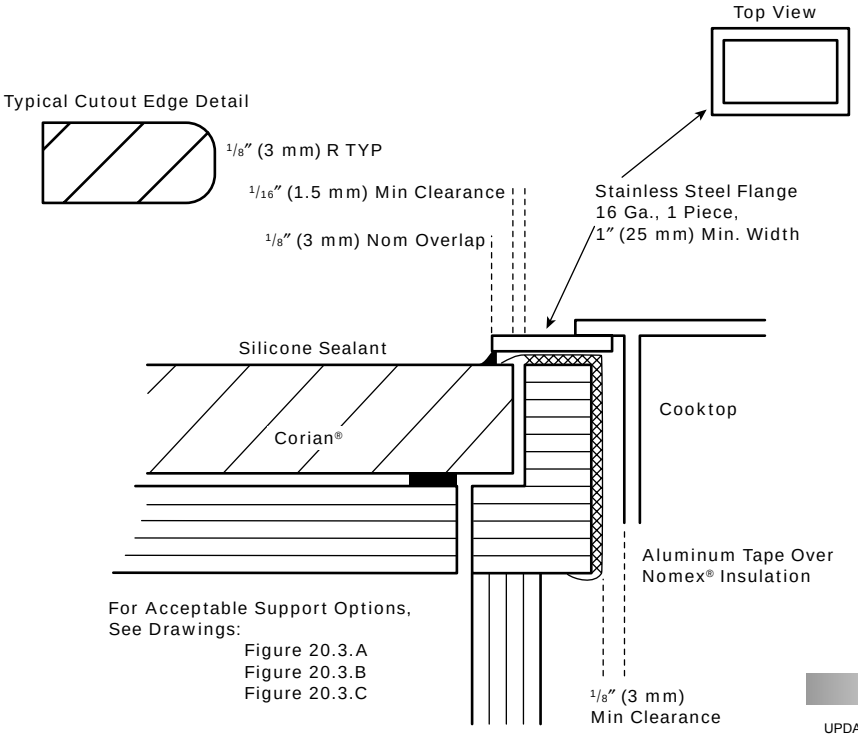
The ring should be designed with the following dimensions and thickness. (The overall size will be determined by the dimensions of the electrical appliance to be installed.) See Figure 23.8.A.

Figure 23.8.A



The ring enables the existing cutout to be enlarged as the wider flange of the surround allows more working space. Figure 23.8.B shows a cross section of the ring when installed.

Figure 23.8.B



Tests have shown that using a stainless steel ring has the desired effect of minimizing heat input into the area around a Corian® cutout, thus greatly reducing the likelihood of any further problems occurring. This technique is also recommended for industrial cooking areas or wherever extensive cooking takes place.

Stainless Steel Cooktop Ring

The ring is cut from one piece of brushed 16-gauge stainless steel. The outer edges may be formed into an attractive design detail if desired.

Minimum Dimensions:

Each leg of the ring should be 1"(25 mm) minimum. Depending on the width of the cooktop flange, this leaves about 3/4" (19 mm) of the ring showing. The outside edge of the ring should overlap onto the Corian® countertop no more than 1/8" (3 mm). The weight of the ring and cooktop should be supported by the wood supports underneath the ring.

STEPS TO COMPLETION:

You will need:

- 0.004" aluminum conductive tape
- NOMEX® felt insulation tape
- silicone sealant
- denatured alcohol and clean, white rags

1. Mark the location of the external edges of the ring on the Corian® countertop.

2. Enlarge cooktop cutout to within 1/8" (3 mm) of marks. Reinforce cutout corners. Rout a 1/16" (1.5 mm) radius on top and bottom edges. Clean off pencil marks.

3. Install wood supports in cutout as shown in Figure 23.8.B.

4. Fix NOMEX® felt insulation tape around the Corian® cutout in the normal way so that the outer edges coincide with the ring edge location marks. Fix 0.004" aluminum conductive tape over this to hold the NOMEX® in place.

5. Clean underside of ring with denatured alcohol. Apply a thin bead of silicone along outside edge of ring.

6. Carefully install ring over cutout and center in opening.

7. Reinstall cooktop in opening of ring. Clean silicone that has squeezed out around ring with denatured alcohol.

This technique can be used for repeat ring cutout cracking situations and give an aesthetically pleasing and lasting solution.

When a cooktop installation has failed for a second time after a replacement or a repair has been made, it may be better to use the ring option to provide a lasting solution to the situation.

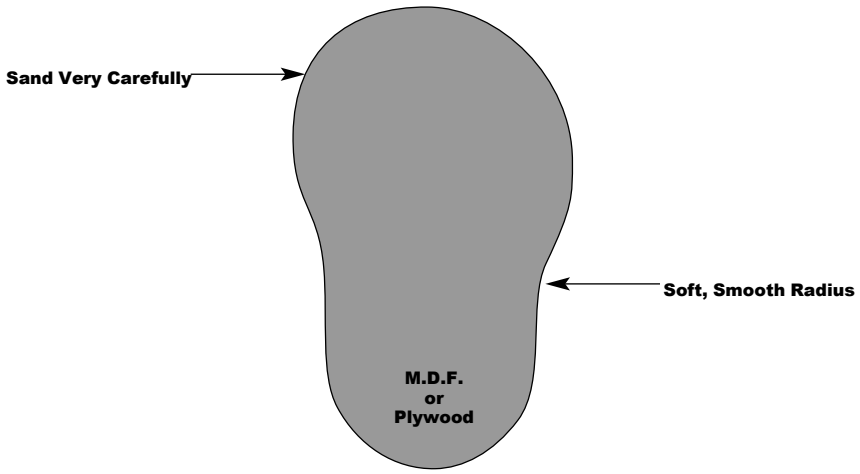
23.9 REPAIRS TO VEINED CORIAN® INSTALLATIONS

In many cases, veined Corian® installations can be repaired successfully and in an inconspicuous manner by following the prescribed technique below.

The repair technique requires the construction of two wood templates from 1/2" (13 mm) M.D.F. or similar material:
- plug template to make the Corian® insert plug
- cutout templates to make the cutout in the damaged Corian® countertop

The templates should be pear-shaped as shown in Figure 23.9.A. This shape gives the best results to match the random veining in Veined sheet materials.

Figure 23.9.A



Plug Template

STEPS TO COMPLETION:

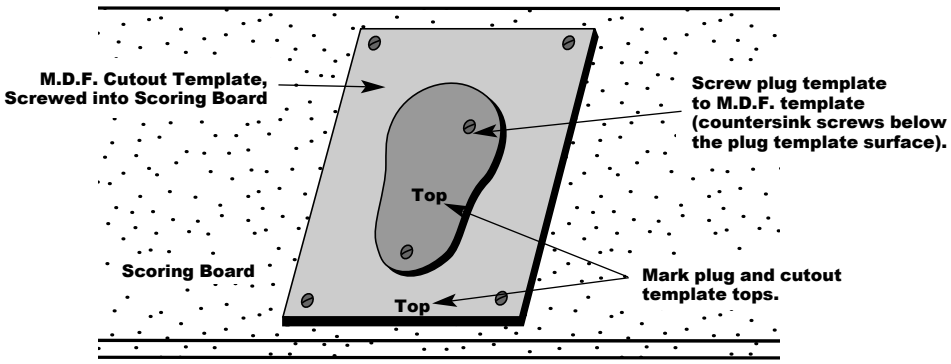
Create an M.D.F. Plug Template

It is very important to ensure the plug template is accurate and totally smooth, as any discrepancies could be copied from the plug template to the cutout template.

Make an M.D.F. Cutout Template from the Plug Template

Using a plunge router (min. 3-hp) fitted with a 1" (25 mm) sleeve guide and a double-fluted 3/8" (10 mm) tungsten carbide bit, carefully follow the plug template as shown in Figure 23.9.B.

Figure 23.9.B


M.D.F. Cutout Template, Screwed into Scoring Board
Screw plug template to M.D.F. template (countersink screws below the plug template surface).
Top
Scoring Board
Mark plug and cutout template tops.
Top

Once everything is set up as shown, set the depth of the router bit so it passes through the full thickness of the template and into the scoring board, i.e., about $^{1}/_{32}$" (.79 mm) deeper than the template thickness. The router baseplate must be sitting on top of the plug template for this measurement.

Start the router and plunge through the thickness of the cutout template and slowly move it in a clockwise direction. It may be useful to use a silicone spray lubricant to reduce surface friction during this operation. Once the cut is completed, unscrew the plug and template for further use.

Make the Veined Corian® Plug

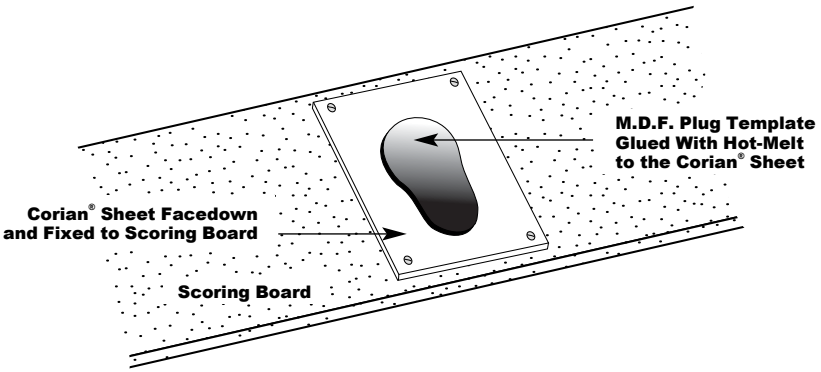
Take a piece of matching Veined Corian® material the same thickness as the repair site. Place this facedown onto an M.D.F. scoring board and fix it securely with screws or hot-melt glue.

Use the same router with the same $^{3}/_{8}$" (10 mm) cutter, but change the sleeve guide to a 30 mm dimension guide. Take the M.D.F. plug template you have made and secure it with hot-melt glue, topside facing up, to the Veined Corian® piece.

With the baseplate of the router firmly on the plug, set the depth of the cutter so it goes through the full thickness of the Corian® and about $^{1}/_{32}$" (.79 mm) into the scoring board. Start the router and plunge carefully through the Corian®. Moving the router in a clockwise direction, cut the plug.

Replace the $^{3}/_{8}$" (10 mm) straight cutter with the standard 15° angle cutter and set the depth of this cut about three-quarters of the thickness of the Corian® sheet. As shown in Figure 23.9.C, rout the angle into the Corian® plug. Reset the cutter depth so it passes just through the sheet thickness and about $^{3}/_{16}$" (5 mm) into the scoring board. This trimming cut will ensure a good-quality edge.

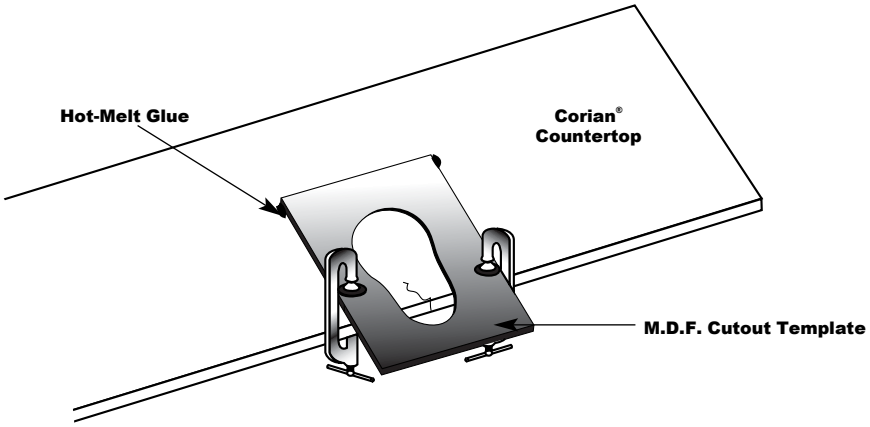
Figure 23.9.C



Cut the Countertop Repair Site

Securely clamp the cutout template created earlier over the area to be repaired.

Figure 23.9.D



With the plunge router fitted with the 30 mm sleeve guide and the 3/8" (10 mm) straight cutter used earlier, place the router baseplate onto the template and set the depth of the cutter so it is the exact thickness of the sheet, unless the downturn itself is damaged. Support the piece to be removed and carefully cut out the damaged area.

Change the 3/8" (10 mm) cutter for the 15° angle cutter and with the baseplate on the template, set the depth of the cutter so it routs the angle onto the edge but only three-quarters of the way through the sheet thickness. This will ensure the plug will be large enough to fit the cutout area.

Take the Corian® plug and try it in the cutout. Assess the added depth of the cut to take the plug just above the countertop surface, then re-rout the cutout. It may require two or three passes to obtain the correct depth.

Once the depth is correct, dam the underside of the cutout, clean all areas with clear denatured alcohol and glue the plug into the repair site using color-matching Joint Adhesive. When the adhesive has fully set, sand flush the insert piece and finish the repair site to match the existing countertop.

Veined Sheet Repair Templates

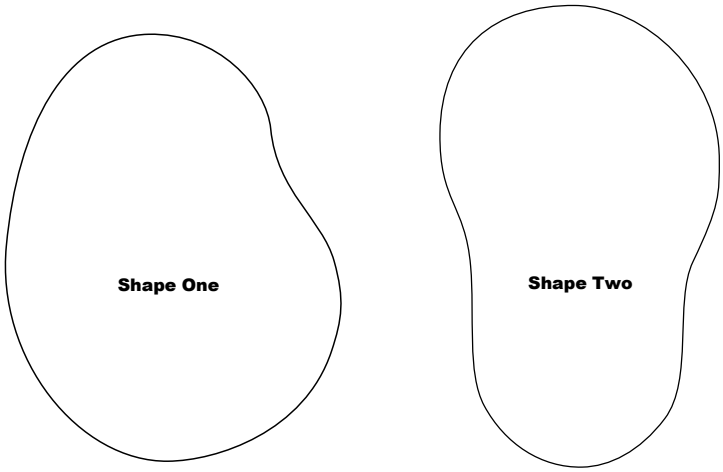


Figure 23.9.E

24.1 SHAPE PERIMETER DRAWINGS FOR C.N.C. PROGRAMMING

DuPont Corian® has shape perimeter drawings in "dwg" and "dxf" format for all sinks and lavatories sold by DuPont in the US. Files containing these drawings are available from DuPont Corian®. Contact your Distributor Fabrication Segment Manager to obtain the drawings that you need

25.1 MSDS: CORIAN® PRODUCTS

MSDS are created to provide product information

MSDS for all Corian® solid surface products and accessories may be obtained by contacting the Fabrication Segment Manager at your local Authorized Distributor.

26.1 PHYSICAL PROPERTIES

Corian® is a densely mineral-filled methylmethacrylate with the durability and rugged characteristics of stone, combined with the workability of hardwood.

It is solid, homogeneous, nonporous and resistant to many chemical and physical hazards.

It cannot delaminate or rot, is very difficult to stain, has high thermal shock and impact resistance, and is very easy to clean and maintain.

With its unusual design flexibility and the capacity to achieve solid, impermeable seams by using DuPont Corian® Joint Adhesive, the material offers specific advantages in many situations where hygiene and ease of maintenance are of particular importance.

While exceptionally durable, Corian®, like most materials, can be damaged by excessive or prolonged exposure to some concentrated chemicals as might happen in certain types of laboratories.

Individual testing is recommended in such circumstances, and your local supplier can help you get samples for testing.

If excessive surface damage is incurred after installation, Corian® has unique repairability.

In most instances it can be repaired on site with little difficulty using plastic abrasive scouring pads or an orbital sander.

In cases of severe abuse, the damaged section can be cut out completely and replaced with a plug of Corian®.

Substances which are in common use, for example:

Alcohol, coffee, tea, fruit and vegetables, ammonia (10%), bleach (5%), disinfectants, washing soda, shoe polish, etc., can usually be removed with no effect on the surface with water and ordinary cleansing agents, abrasive scouring powders, or Scotch-Brite® scouring pads.

The same procedure will remove marks from cigarettes left burning on the surface.

Use alcohol to wipe away stubborn cosmetics, and remove nail polish spills with nail polish remover, washing with water after treatment.

Concentrated acids, chlorinated solvents such as chloroform, and ketones found as acetone in some brands of nail polish and paint brush cleaners can all affect appearance after prolonged contact.

However, if flushed with water promptly after exposure, most strong reagents and specialized biochemical stains will show no effect.

Following are the results of specific tests which have been conducted on Corian®.

Table 26.1.A

Performance Properties of Corian® Products

PROPERTY	TYPICAL RESULT	TEST
Tensile Strength	6,000 psi	ASTM-D-638
Tensile Modulus	1.5 x 10^6 psi	ASTM-D-638
Flexural Strength	10,000 psi	ASTM-D-790
Flexural Modulus	1.2 x 10^6 psi	ASTM-D-790
Tensile Elongation	0.4% min.	ASTM-D-638
Strain at Break	0.810%	ASTM-D-638
Work to Break	2.48 in-lbs (modified)	ASTM-D-638
Hardness	>85 Rockwell "M" Scale 56 Barcol Impressor	ASTM-D-785 ASTM-D-2583
Thermal Expansion	3.02 x 10^{-5} in/in/ºC 1.80 x 10^{-5} in/in/ºF	ASTM-D-696
Thermal Conductivity	7.0 Btu/hr/sq ft ºF	DuPont Test
Specific Heat	0.2935 + (0.001 x ºC) pcu/lb ºC	DuPont Test
Volumetric Heat Capacity	0.33 Btu/lb ºF 37.05 Btu/cu ft ºF	DuPont Test
Gloss (60º Gardner)	5–75 (matte–polished)	ANSI-Z124
Color Stability	No Change—200 hrs.	NEMA LD3–3.10
Wear & Cleanability	Passes	ANSI-Z124.3 & Z124.6
Abrasion Resistance	No loss of pattern Weight loss (1,000 cycles) = 0.2 gm Wear (10,000 cycles) = 0.008•	CS-221-66
Boiling Water Surface Resistance	No Change	NEMA LD3-3.05
High Temperature Resistance	No Change	NEMA LD3-3.06
Conductive Heat Resistance	No Change	NEMA LD3-3.08
Impact Resistance Notched Izod Gardner **Ball Drop** 1/4" sheet 1/2" sheet 3/4" sheet	28 ft-lbs/in of notch Solid Colors 9.3 ft-lbs Small-Particulate Colors 13.3 ft-lbs 36", 1/2 lb. ball, no failure 144", 1/2 lb. ball, no failure 204", 1/2 lb. ball, no failure	ASTM-D-256 (Method A) ASTM-D-3029 NEMA LD3-3.03
Point Impact: Bowls	No Cracks or Chips	ANSI-Z124.3 & Z124.6
Stain Resistance: Sheets	Passes	ANSI-Z124.3 & Z124.6
Weatherability	DE 94<5 in 1,000 hrs	ASTM-G-26
Fungi and Bacteria Resistance	Does not support microbial growth	ASTM-G-21 & G-22
Specific Gravity	1.7	
Approx. Material Weight	1/4" (6 mm) 1/2"† (12.3 mm) 3/4" (19 mm) 2.2 4.4 6.6 lbs/sq ft	
Water Absorption 3/4" Sheet 1/2" Sheet 1/4" Sheet	long-term 0.4% 0.6% 0.8%	ASTM-D-570

Table 26.1.A

table continued from previous page

PROPERTY	TYPICAL RESULT	TEST
Flammability **All Colors*** Flame Spread Smoke Developed	 <25 <30	 ASTM-E-84 & NFPA-255
*1/4" material tested adhered to 1/2" gypsum board or masonry surface using panel adhesive for DuPont Corian® and tested as a composite.		
Oxygen Index	0.357	ASTM D-2863
Toxicity	Solid Colors: 99 grams Small-Particulate Colors: 66 grams	Pittsburgh Protocol "LC 50" Toxicity Test
Coefficient of Friction	0.189 static 0.171 dynamic	DuPont Test No. TD-511-A
Arc Resistance	190 second, no track 60 sec., rerun, no track	DuPont Test
Dielectric Strength Solid Colors Small-Particulate Colors	 275 volts/0.001" 263 volts/0.001"	ASTM-D-149
Dielectric Constant Solid Colors Small-Particulate Colors	 4.96 @100 Hz 4.46 @100 Hz	ASTM-D-150
Dissipation Factor Solid Colors Small-Particulate Colors	 0.0698 @ 100 Hz 0.077 @ 100 Hz	ASTM-D-150
Surface Conductivity Solid Colors	 5.0×10^{-16} Mho	DuPont Test No. TD-533-A
Volume Conductivity Solid Colors	 4.7×10^{-16} Mho	DuPont Test No. TD-533-A
Volume Resistivity Solid Colors Small-Particulate Colors	 4.2 Ohms-cm x 10^{-14} 10 Ohms-cm x 10^{-14}	ASTM-D-257
Electrical Charge Relaxation Time Solid Colors	 560 seconds	FTMS 101B MILB-81705
Heat of Combustion	2,220 cal/gm	Oxygen bomb calorimeter method

†Standard dimensions are nominal (15/32" or 12.3 mm).

26.2

CHEMICAL RESISTANCE

Chemical Resistance of Corian® Solid Surface Products

A test procedure similar to ANSI Z124.6, Section 5.2, is used to evaluate the stain and chemical resistance of Corian® surfaces products. Two puddles of each chemical liquid are applied to the surface of the Corian®. One puddle is covered with a piece of glass to keep it wet for the entire test period. The other is allowed to air-dry. After 16 hours of exposure, the chemical residue is scrubbed with a wet Scotch-Brite® pad and bleaching cleanser (Ajax®, Comet®, Soft Scrub®, etc.). The results of the test are shown on the following pages.

Since surface damage may vary with chemical strength and exposure time, and since scrubbing with cleansers may not always be appropriate (i.e., photo darkroom, clean lab, etc.), it is good practice to install a test piece of material to confirm the suitability of Corian® for the application.

The following chemical residues can be removed with a wet Scotch-Brite® pad and bleaching cleanser:

- Acetic acid (10%)
- Acetone
- Acrodine orange
- Ag eosin blue (5%)
- Ag gentian violet
- Alcohol (beverage type)
- Americlear
- Ammonia (10%)
- Ammonium hydroxide (5, 28%)
- Amyl acetate
- Amyl alcohol
- Aromatic ammonia

- Ballpoint pen ink
- Benzene
- "Betadine" solution
- Bite registration base
- Bleach (household type)
- Blood
- B-4 body conditioner
- B-5 fixative
- Butyl alcohol

- Carbon disulfide
- Carbon tetrachloride
- "Cavity" in phenol
- Citric acid (10%)
- Caulk irm
- Calcium thiocyanate (78%)
- Cigarette (nicotine)
- Coffee
- Cooking oils
- Copalite varnish
- Cotton seed oil
- Crystal violet
- Cupra ammonia

- Debacterol
- Diff-quick stain
- Dimethyl formamide
- Dimethyl methylene blue
- Dishwashing liquids/powders
- "Dry bond" dental adhesive

- Eosin stain
- Equalizing accelerator (23% eugenol)
- Equalizing base
- Ethyl alcohol (ethanol)
- Ethyl acetate
- Ethyl ether
- Eucalyptol
- "Eugenol"

- Ferric chloride
- "Fisher" formaldehyde (40%)
- Food coloring
- Formaldehyde
- Formalin (10% neutral buffered)

- Gasoline
- Gentian violet
- Giemsa

- Hair dyes
- Hemastoxlin stain
- Household soaps
- Hydrochloric acid (20, 30, 37%)

(listing continued from previous page)

- Hydrogen peroxide

- India ink
- Introfiant arterial chemical
- Iodine (1%)

- "Kelviscera" cavity
- Kerosene
- Ketchup

- Lemon juice
- Lipstick
- "Luralite" base and accelerator
- Luxol blue dye
- Lye (1%)
- "Lysol" brand cleaner

- Mercurochrome (2%)
- Methanol
- Methyl ethyl ketone
- Methyl orange (1%)
- Methyl red (1%)
- Mineral oil
- Munsel's solution
- Mustard

- Nail polish
- Nail polish remover (acetone)
- Napthalene (naptha)
- Neotopanel
- n-Hexane

- Olive oil

- Pencil lead
- Perchloric acid
- Permaflow preinjection
- "Permaglow" arterial fluid
- Permanent marker ink
- Peroxide
- Phenophthalein (1%)
- Phosphorus pentoxide
- Picric acid
- "Procaine"
- Potassium permanganate (2%)

- Restorative anti-dehydrant

- Safranin
- Salt (sodium chloride)
- Shoe polish
- Silica dental cement (liquid)
- Silver nitrate (10%)
- Soapless detergents
- Sodium bisulfate
- Sodium hydroxide solution (5, 10, 25, 40%)
- Sodium hydroxide flake
- Sodium hypochlorite (5%)
- Sodium sulfate
- Soy sauce
- Sugar (sucrose)
- Sulfuric acid (25, 33, 60%)

- Tannic acid
- Tea
- Tetra hydrofuran
- Tetramethyl rhodamine isothiocyanate
- "Thymol" in alcohol
- Tincture of iodine
- Tincture of mercurochrome
- Tincture of merthiolate
- Toluene
- Tomato sauce
- Trichloroethane
- Trisodium phosphate (30%)
- Trypan blue

- Urea (6%)
- Uric acid
- Urine

- Vinegar

- Washable inks
- Wine (all varieties)
- Wright's stain

- Xylene

- Zenker's fixative
- Zephiran chloride
- Zinc chloride
- Zinc oxide (paste, ointment)

Class II reagents

The following residues may require sanding for complete removal. **Frequent or long exposures on Corian® should be avoided:**

- Acetic acid (90, 98%)
- Acid drain cleaners
- Aqua regia cleaner
- Chlorobenzene
- Chloroform (100%)
- Chromic trioxide acid
- Cresol
- Dioxane
- Ethyl acetate
- Equalizing mix (50/50)
- Formic acid (50, 90%)
- Furfural
- Glacial acetic acid
- Hexphene autopsy viscera treatment
- Hydrofluoric acid (48%)
- Luralite mix (50/50)
- Methylene chloride–based products
  Paint removers
  Brush cleaners
  Some metal cleaners
- Nitric acid (25, 30, 70)
- Phenol (40, 85%)
- Phosphoric acid (75, 90%)
- Photographic film developer (used)
- Sulfuric acid (77, 96%)
- Trichloroacetic acid (10, 50%)

Specialized Products

Biochemistry staining agents in most instances will stain Corian® after a few minutes exposure. However, the stains are generally removable by prompt scrubbing with acetone as indicated below.

- Giemsa
- Trypan blue—Stains removed with acetone
- Acridine orange
- Safranine
- Crystal violet—Stain incompletely removed with acetone

The following **dental treatment materials** will degloss, etch or slightly stain Corian® surfaces. Affected areas may be restored by scrubbing with a Scotch-Brite® cleaning pad.

- Copalite intermediary varnish
- Caulk IRM (with or without ZnO)
- Eugenol (with or without ZnO)
- Luralite accelerator (16% Eugenol)
- Luralite base
- Solitine solvent
- Equalizing accelerator (23% Eugenol)
- Equalizing base
- Bite registration base
- Bite registration accelerator (2% Eugenol)
- Bite registration mix (50/50)

Stains caused by the following dental treatment materials may require light to moderate sanding for removal.

• Luralite mix (50/50)
• Equalizing mix (50/50)

Embalmer's Supplies (Full Strength) These materials may degloss, etch or slightly stain Corian® surfaces. Affected areas may be restored by scrubbing with acetone or Scotch-Brite® cleaning pad.

• 20th Century Cavity Fluid (Lear Embalming Service Ltd.)
• 20th Century Arterial Fluid
• 20th Century Jaundice Fluid
• ACA Hall Cavity Fluid
• ACA Hall Arterial Fluid
• CWS Glycoform Arterial Fluid
• CWS Glycoform Cavity Fluid
• Formotel Arterial Fluid (France)
• Hygecobel Hygefluide (France)
• Peach Bloom

26.3 FLAMMABILITY RATINGS

Purpose

While only a small percentage of residential construction is currently regulated, fire codes and/or specifications are very important to the commercial building market. The top rating given to Corian® surfaces products is, therefore, most significant.

In light of this ever-increasing emphasis on fire performance, the purpose of this bulletin is to summarize the test method used to measure the flammability of Corian®, to report results obtained and to compare the data with selected other building materials.

Performance of Corian®

Table 26.3.A

ALL COLORS* Flammability	
Flame Spread	<25
Smoke Developed	<30
Class	I & A

*1/4" (6 mm) results reflect material adhered to both masonry surfaces and standard grade 1/2" (12.3 mm) thick Gypsum Board using Panel Adhesive for DuPont Corian® and tested as a composite.

The performance of Corian® is viewed as very good, especially compared with many materials used in residential applications. Smoke is of particular importance in that large amounts can reduce visibility and hamper escape and fire-fighting activities. For comparison, typical ratings for other products as shown in the UL Building Materials List for January, 1986, are listed in Table 26.3.B. (Test results can vary widely depending on the substrate, type product, and type adhesive and amount used.)

Table 26.3.B

ITEM	FLAME SPREAD	SMOKE DEVELOPED
Wallboard, Gypsum (1)	15	0
Wood Particleboard (2)	155	200
Fiberglass-Reinforced Panels (FRP) (3)	70	500+
Laminates, Plastic (4)	70	35
Wall Coverings, Interior (5)	25	15
Hardboard (6)	150	400
Acoustical Tile and Grid Panels (7)	25	10

(1) Celotex Corp.—A gypsum core surfaced on both sides with paper.
(2) Georgia Pacific Corp.—Untreated board prefinished on one side.
(3) Lasco, Div. of Phillips Industries—Type 75.
(4) Nevamar Corp.—Type BKR. Rating varies with product type.
(5) Columbus Coated Fabrics, Div. of Borden Chemical—Type 111-R.
(6) Masonite Corp.—Hardboard with various face finishes.
(7) Armstrong World Industries—Regular, Spatter or Acrylic coatings.

Fire ratings used by regulatory code agencies relate primarily to the performance of materials when used in high-density areas in such buildings as schools, healthcare facilities for the elderly, hospitals, high-rise apartments, motels, hotels, etc. Here the flame spread is the primary criterion as tabulated below. Usually corridors, lobbies, entrances, etc., are restricted to Class I. All Corian® sheet products meet Class I ratings when properly installed.

Table 26.3.C

FLAME SPREAD	RANGE SMOKE	DEVELOPED RATING
0–25	450	Class I
26–75	450	Class II
76–225	450	Class III

Method of Testing

The "Steiner Tunnel" test was used for measuring flammability of Corian® sheet. This test is known as ASTM E84, Standard Test Method for **Surface Burning Characteristics of Building Materials.** This test procedure is similar to Underwriters' Laboratories (UL) No. 723, National Fire Protection Association (NFPA) 255, ANSI No. 2.5, and UBC 42-1.

In this test, the specimen is inserted into a 25' (7.6m)-long furnace. The specimen (20" [508 mm] wide and 24' [7.3 m] long) is placed into the top of the tunnel and sealed with a mineral slab roof. A gas burner is applied at one end and a blower and a stack at the other end to create a controlled draft.

Distance of the flame spread is measured on the burned surface of the material during a ten-minute test. Smoke generation is measured by a photometering system installed in the exhaust stack.

The material is scored by comparing results to inorganic reinforced cement board rated at zero and red oak flooring rated at 100. For example, a material having a flame spread of 150 represents a material whose rate of flammability is 1.5 times that of red oak. Smoke generation scores are arrived at in a comparable fashion.

Note:

The test standard and test results described above are intended to show the performance of Corian® relative to various materials when subjected to the prescribed test conditions. Under actual fire conditions, performance may vary significantly from that which might otherwise be inferred from the test results.

26.4 CORIAN® AND THE ENVIRONMENT

It is DuPont's vision to become the world's premier company in safety, health and environmental concerns.

DuPont is committed not to sell any product which cannot be produced, handled and disposed of in a manner compatible with human safety and environmental best practices.

In line with this, we offer the following information about Corian® and encourage you, as an Authorized Dealer of Corian® and Certified Fabricator of Corian®, to share it freely with your customers.

Corian® is one of the newer man-made materials, with which some people are as yet unfamiliar. However, the product is not entirely brand new: It has been marketed since 1971. For more than two decades, a great deal of experience has been recorded on its manufacture, fabrication, application and disposal.

Corian® is composed of two-thirds by weight aluminum trihydrate, a natural mineral. This is a product with which most people are in daily contact, since it is an important ingredient (e.g., in toothpaste). This component permits Corian® to be worked with ordinary woodworking tools.

The other one-third is polymethylmethacrylate, or PMMA for short. This is its pure sheet form. Pure PMMA is often used in shower doors, for instance, where it is valued for its inertness and lack of porosity. Hygiene and ease of cleaning are related benefits. Its UV-fastness and lightfastness are better than that of most other types of polymers.

The pigments used to color Corian® are all approved for food contact.

Disposability of polymers is an important public issue today. Where does Corian® stand?

DuPont has laid down and regularly implements a range of actions to ensure efficient and environmentally safe handling and disposal of polymer-based components of solid waste. This includes Corian®. The emphasis is heavily on recycling.

It starts with a manufacturing process, in which waste streams are minimized; Corian® is recycled whenever possible and is used in the manufacturing process of the Colors of Corian® that contain particulates such as Mont Blanc, Dusk and Platinum.

Corian® manufacturing is a polymerization process which is carried out at low temperature and generates heat, hence requiring little energy input.

Programs are in place to constantly monitor plant emissions, noise levels and waste streams which could harm the health of employees or impact the natural environment.

The major contribution of Corian® to waste prevention is its durability, backed by DuPont's warranty. It can be easily maintained in "as new" condition and it can be repaired in case of abuse.

In the relatively rare cases where recycling is impossible, Corian® can be mixed with other polymers for incineration in an environmentally acceptable way without generating toxic fumes.

Corian® fabrication workshops can burn wood sawdust and Corian® dust generated during fabrication, in workshop heating systems, provided they have a certificate if required by local by-laws.

DuPont and the Authorized Distributors of Corian® train the fabricators and installers to work safely and provide them with material safety data about the products they are using.

Corian® is nontoxic, and does not rot or leach out through water contact. It can be a candidate for landfilling, provided that permits are obtained, when required.

26.5 CORIAN® SAFETY INFORMATION FOR DUST AND FUMES

Dust and fumes generated by sanding, sawing and other machining operations on Corian®, cause no unusual hazards. They should, however, be controlled in accordance with normal practices for good shop safety and housekeeping. Some specific considerations relative to Corian® dust and fumes are outlined below.

26.5.1 DUST INHALATION EXPOSURE

Dust Inhalation Exposure

Fine particles that may be generated during certain fabrication operations with Corian® fall within the category of nuisance dusts rather than toxic dusts. The OSHA Permissible Exposure Limit (PEL) for nuisance dust is 5 mg/m^3 (respirable fraction) or 15 mg/m^3 total dust (29 CFR 1910.1000, Table Z3). Local ventilation and collection should be used to minimize dust concentrations in breathing zones of workers. When available ventilation is inadequate to keep dust levels below these limits, a properly fitted particulate respirator approved by NIOSH/MSHA* for this use should be worn. The American Conference of Governmental Industrial Hygienists (ACGIH) has established a TLV for Nuisance Particulates of 10 mg/m^3. As of September 1987, OSHA has not changed its Permissible Exposure Limit (PEL) for either the total or respirable fraction.

*National Institute for Occupational Safety and Health/Mine Safety and Health Administration.

26.5.2 EXPLOSIVE HAZARD

Explosive Hazard

Corian® dust does not present an explosion hazard. Tests at Factory Mutual Research and by DuPont's Engineering Test Center confirm that even when Corian® dust is finely divided and mixed with air, chances of an explosion occurring is remote.

The above determination is not surprising when the composition of Corian® is examined. Corian® is an excellent example of a material's dust rendered nonexplosive by dilution with an inert material, as described in NFPA's "Fire Protection Handbook," sixteenth edition, first paragraph on page numbers 5–101. Here, inert rock dust is added to coal dust, an explosive material, in a concentration large enough (65%) to render the total dust mixture inert. The formula for Corian® closely resembles the percentage of inert material used in this example.

Factory Mutual Research used their own Dust Explosion Apparatus to evaluate a Corian® dust sample. The following pressures were developed under satisfactory operating conditions of dust dispersion and ignition using 0.78 ounces per cubic foot of material:

Table 26.5.2.A

VENT	DEVELOPED PRESSURE (PSIG) (as received)	(-200 mesh)	(-100 mesh + 200 mesh)
Unvented	11.00	7.00	16.00
1 ft^2 to 180 ft^3 (930 cm^2 to 5.10 m^3)	<1	<1	1.00
1 ft^2 to 100 ft^3 (930 cm^2 to 2.83 m^3)	—	—	<1

These results as interpreted by Factory Mutual Research personnel, indicate there is very little, if any, explosive potential for Corian® dust.

Dust explosion tests conducted at DuPont's Engineering Test Center, using a modified Hartmann Test Apparatus, showed air dispersions of the dust were not explosive. The dust tested had been sieved through 200 mesh to enhance any explosive properties, and concentrations tested ranged from 0.038 to 1.54 g/l. The ignition source used was a 10 kV continuous arc discharged in the dust dispersion.

26.5.3

FLAMMABILITY

Flammability

Fillers used in Corian® are recognized as some of the best flame-retardant materials available in the industry. These special fillers, which account for approximately two-thirds of the total formulation, are primarily responsible for a Class 1 Flammability Rating for Corian® when tested in the "Steiner Tunnel" as per ASTM E84-84a, Surface Burning Characteristics of Building Materials.

Corian® dust per se was exposed to two types of flammability testing:

1. A 10 kV continuous arc was discharged through a layer of dust. Some charring occurred in the area of the arc, but burning did not propagate away from the point of ignition and stopped when the arc was discontinued.
2. A flame from a propane torch was applied to a layer of the dust. The sample burned while in the flame but self-extinguished upon removal of the ignition source.

26.5.4

FUMES

Fumes

Fabricating Corian® involves sawing, routing, sanding, etc., to turn or customize products into finished articles. These operations create friction and result in elevated temperatures at the tool cutting face, often in excess of 570°F (300°C). This is high enough to release small amounts of methyl methacrylate fumes that can be detected by smell at concentrations as low as one part per million (1 ppm). By contrast, a Threshold Limit Value (TLV) of 100 ppm is considered sufficiently low to protect against discomfort from irritation and is well below the level giving rise to any systemic effect**. While such concentrations of fumes are possible at the cutting tool surface, they dissipate with good ventilation to very low levels only a foot or two from the tool. For this reason, localized ventilation should be provided for those areas where extensive machining operations are performed.

**The American Conference of Governmental Industrial Hygienists Documentation of the Threshold Limit Values for Substances in Workroom Air 5th. ed. Cincinnati, OH, 1986.

26.5.5

CONCLUSIONS

Conclusions

1. Corian® dust falls within the category of Particulate Not Otherwise Regulated (PNOR).
2. The dust will not explode even when dispersed in air with an ignition source present.
3. Deposits of dust support combustion but self-extinguish quickly upon removal of the ignition source.
4. Methyl methacrylate fumes are pungent and can be smelled at very low concentrations and can exceed the TLV at the tool cutting face. Good ventilation, however, causes rapid fume dissipation, and very low concentrations are found only a short distance from the tool.

27.1

DUPONT CORIAN® FABRICATION TRAINING

DuPont Corian® Fabrication Training

The Hands-On Level 2 training course is required by DuPont for a new company wishing to become a Certified Fabricator of Corian®. Hands-On training is also suitable for training new employees of existing CF/I's, or simply as an update.

All training is being handled by the local Authorized Distributor. Candidates for training should contact the FSM at their Distributor for information on class availability.

Provisions have been made for companies skilled in solid surface fabrication but who have not worked with Corian®. At the discretion of the local Authorized Disributor, an experienced company may skip hands on training. However, if any of the inspected installations fail, the company must send someone to hands-on training.

27.2

CERTIFIED INSTRUCTORS

DuPont has trained a group of talented individuals who either work for, or are associated with, an Authorized Distributor of Corian®. These individuals are capable of teaching the Level 2, Hands-On course on a local basis. These courses satisfy the training requirement for certification. The schedule for these courses is totally at the discretion of the sponsoring Authorized Distributor.

For more information on class dates or to apply for a course, contact your local Authorized Distributor of Corian®.

27.3

REPAIR TRAINING

DuPont worked with an industry expert to put together a hands-on training course which covers repair techniques for DuPont Corian®. The class is mandatory for anyone who may wish to become a Corian® Custormer Service Specialist. It is also an excellent course for any CFI who wants to salvage material after shop mistakes. Contact your Authoirized Distributor of Corian® for information.

28.1 PARTIAL SUPPLIER LIST

The following supplier list provides suggested sources for tools and equipment suitable for use with Corian®. Other manufacturers may offer similar equipment. The inclusion of a company on this list is in no way a recommendation or endorsement by DuPont. The names are listed here for your convenience.

28.1.1 POWER TOOLS

DeWalt Industrial Tool Co. 701 East Joppa Road Towson, MD 21286	www.dewalt.com (410) 716-3900 (410) 716-7051
FestTool USA Tool Technic Systems, LLC 1187 Coast Village Road, Suite 1215 Santa Barbara, CA 93108	www.festool-usa.com (888) 463-3786 (888) 550-6425
Fein Power Tools 1030 Alcon Street Pittsburgh, PA 15220	www.feinus.com (800) 441-9878 (412) 922-8886
Makita USA, Inc. 14930C Notham Street La Mirada, CA 90638	www.makita.com (714) 522-8088 (714) 522-8133
Porter-Cable Corporation 4825 Highway 45 PO Box 2468 Jackson, TN 38305	www.porter-cable.com (800) 487-8665 (901) 664-0525 800-4US-TOOL
Ryobi America Corporation 1424 Pearman Dairy Road Anderson, SC 29625	www.ryobi.com (864) 964-3305 9864) 964-3230
S-B Power Tool Co. 4300 W. Peterson Avenue Chicago, IL 60646	www.boschtools.com (864) 286-7330 (864) 794-7575

28.1.2 AIR TOOLS

IR Aro P.O. Box 151 Bryan, OH 43506	www.aro.ingersollrand (419) 636-4242 (419) 633-1674
Desoutter 11845 Brookfield Avenue Livonia, MI 48150	www.desouttertools.com (313) 522-7010
Dyna-Brade 8989 Sheridan Drive Clarence, NY 14031	www.dynabrade.com (716) 631-0100 (716) 631-2073

28.1.3

SAW BLADES & BITS

Sioux Tools Inc. 2901 Floyd Boulevard Sioux City, IA 51102	www.siouxtools.com (800) 722-7290 (800) 722-7236
Amana Tool Corp. 120 Carolyn Boulevard Farmingdale, NY 11735	www.amanatool.com (631) 752-1300 (631) 752-1674
DeHart Tooling 1433 9th Avenue Southeast Hickory, NC 28603	www.dehartusa.com (800) 438-5771 (828) 327-4845
Demp's Saw & Tool Company, Inc. 3367 Commercial Road Greensboro, NC 27407-0990	 (910) 299-4749
DMLIndustrial Products P.O. Box 788 Hickory, NC 28603	 (828) 322-4266 (828) 322-6224
Eagle International Carbide P.O. Box 5639 Statesville, NC 28687	www.eagle-carbide.com (800) 633-8068 (800) 683-8810
Everlast Saw & Carbide, Inc. 1478 Rail Head Blvd. Naples, FL	www.everlastsaw.com (941) 596-3333 (941) 596-9616
Forrest Manufacturing Company, Inc. 461 River Road Clifton, NJ 07014	www.forrestblades.com (201) 471-5237
Fred M. Velepec Company, Inc. 71–72 70th Street Glendale, NY 11385	www.velepec.com (800) 365-6636 (718) 417-3523
FS Tool Corp 210 S. Eighth Street Lewiston, NY 14092	fstoolcorp.com (905) 475-1999 (905) 475-0347
Freud Industrial Division 218 Feld Avenue High Point, NC 37364	www.freudtools.com (800) 334-4107 (336) 434-8328
General Saw Corporation 20 Wood Avenue Secaucus, NJ 07096	www.generalsaw.com (201) 867-5330

PARTIAL SUPPLIER LIST

Gladu Tools, Inc.
21 Lawrence Paquette Drive
Brooklyn, NY 11222-1978
www.gladu.com
(800) 363-9117
(450) 460-2655

Lafayette Saw and Knife
292 North Henry Street
Brooklyn, NY 11222-1978
(718) 383-4545

Leitz Tooling Systems, Inc.
4301 East Paris Avenue
Grand Rapids, MI 49508
www.leitz.com
(800) 253-6070
(616) 698-9270

Paramount Saw Co.
15014 Paramount Boulevard
Paramount, CA 90723
www.paramountsaw.com
(800) 237-SAWS

Systi Matic Company
12530 135th Avenue, NE
Kirkland, WA 98034
www.systimatic.com
(800) 426-0035
(800) 513-2529

Titman USA
15014 Paramount Boulevard
Paramount, CA 90723
www.titmanusa.com
(800) 722-6486
(562) 633-0475

Leuco Oartli
28090 West Concrete Drive
Ingleside, IL 60041
(800) 433-1630

Wisconsin Knife Works
2505 Kennedy Drive
Beloit, WI 53511
www.wisconsinknifeworks.com
(800) 225-5959

28.1.4

DIAMOND BLADES AND DIAMOND CUTTERS

Alpex Wheel Co.
29 Atwood Avenue
Tenafly, NJ 07670
www.alpexwheel.com
(800) 631-1654
(201) 871-1700

F. S. Tool Corporation
210 South 8th Street
Lewiston, NY 14092
www.fstoolcorp.com
(905) 475-1999
(905) 475-0347

Leitz Tooling Systems, Inc.
4301 East Paris Avenue
Grand Rapids, MI 49508
www.leitz.com
(800) 253-6070
(616) 698-9270

Leuco-Oertli Tool Corp.
28090 W. Concrete Drive
Ingleside, IL 60041
www.leucotool.com
(815) 344-0444
(815) 344-1140

Wel-Co Metallurgical Corporation
P.O. Box 1767
Oldsmar, FL 34677

www.wel-co.com
(800) 343-4960
(813) 854-2638

28.1.5 V-GROOVING MACHINE

A&S Machinery, Inc.
14633 Carmenita Road
Norwalk, CA 90650-5228

www.asmachinery.com
(562) 921-3266

Auto V Grooving Inc.
863 Fenmar Drive
Toronto, Ontario, Canada M9L 1C8

www.vgrooving.com
(800) 387-5819
(416) 749-8225

Ex-Factory—U.S. Distributor
for Star V-Machinery Ltd.
1805 Sardis Road North
Charlotte, NC 28270

www.exfactory.com

(704) 841-2001
(704) 841-1200

Profilematic
1380 Mitchell Boulevard
Schaumburg, IL 60168

www.profilematic.com
(847) 352-9990
(847) 352-2580

Star V-Machinery Ltd.
2053 Williams Parkway #48
Brampton, Ontario, Canada L6S 5T4

www.starvmachinery.com
(877) 807-1044
(704) 664-1407

28.1.6 CNC ROUTER MANUFACTURERS

Atlantic Machinery Corporation
36 South End Plaza
New Milford, CT 06776

www.atylanticmach.com
(860) 354-7200
(860) 354-0315

AXYZ Automation, Inc.
5330 South Service Road
Burlington, ON Canada L7L 5L1

www.axyz.com
(905) 634-4940
(905) 634-4966

Anderson American Corporation
9800A Southern Pine Boulevard
Charlotte, NC 28273

(704) 522-1823
(704) 522-0871

C.M.S. North America, Inc.
4095 Karona Court
Caledonia, MI 49316

www.cmsna.com
(616) 698-9970
(616) 698-9730

C. R. Onsrud, Inc.
P.O. Box 419
Troutman, NC 21866

www.cronsrud.com
(704) 528-4528
(704) 528-6170

PARTIAL TOOL AND ACCESSORY LIST

PARTIAL SUPPLIER LIST

GPM Technologies 1813 Fabyan Parkway West Chicago, IL 60185	www.gpmtechnologies.com (708) 208-1300 (708) 208-1074
Hendrick RWH Industries 32 Commercial Street Salem, MA 01970	www.hendrickmfg.net (978) 741-3600 (978) 744-0242
KOMO Machine Company 11 Industrial Boulevard Sauk Rapids, MN 56379	www.komo.com (800) 255-5670 (320) 656-2479
Motionmaster 450 West California Avenue Akron, OH 44321	www.motionmaster.com (760) 639-1444 (760) 639-1413
SCM Group USA, Inc. 2475-B Satellite Boulevard Duluth, GA 30136	www.scmgroup-usa.com (770) 813-8818 (770) 813-8819
Standard Router, Inc. 4012 West Illinois Avenue Dallas, TX 75211	www.standardrouter.com (214) 337-8600 (214) 339-7100
Stiles Machinery Company 3965 44th Street S.E. Grand Rapids, MI 49512	www.stilesmachinery.com (616) 698-7500 (616) 698-9411
Techno-isel 2101 Jericho Turnpike New Hyde Park, NY 11040	www.techno-isel.com (800) 948-3246 (516) 358-2576
Thermwood Corporation P.O. Box 436 Dale, IN 47523	www.thermwood.com (800) 533-6901 (812) 937-2956
Vytek 2 Omega Way Littleton, MA 01460	www.vytek.com (978) 952-6430 (978) 952-6036
Delta International Machinery Group 246 Alpha Drive Pittsburgh, PA 15238	www.deltawoodworking.com (800) 438-2486 412-963-2489

28.1.7 LARGE PRODUCTION TOOLS

DeWalt Industrial Tool Co.
701 East Joppa Road
Towsand, MD 21286
www.dewalt.com
(410) 716-3900
(410) 716-7051

Evans Machinery, Inc.
5530 North 51st Street
Glendale, CA 85301
www.evansmachinery.com
(623) 934-7249
(623) 934-7384

Hendrick RWH Industries
32 Commercial Street
Salem, MA 01970
www.hendrickmfg.net
(978) 741-3600
(978) 744-0242

Holz-Her
5120 Westinghouse Blvd.
Charlotte, NC 28273
www.holzher.com
(704) 587-3400
(704) 587-3419

Powermatic Corp.
427 Sandford Road
LaVergne, TN
www.powermatic.com
(800) 274-6848

Stiles Machinery Company
3965 44th Street S.E.
Grand Rapids, MI 49512
www.stilesmachinery.com
(616) 698-7500
(616) 698-9411

Altendorf® America
3965 44th Street S.E.
Grand Rapids, MI 49512
www.altendorfamerica.com
(800) 424-3232

28.1.8 SAW MANUFACTURERS

Biesse Group America
4110 Meadow Oak Drive
Charlotte, NC 28208
www.biesseusa.com
(704) 357-3131
(704) 357-3130

Colonial Saw Company, Inc.
122 Pembroke Street
Kingston, MA 02364
www.csaw.com
(860) 354-7200
(781) 585-9375

Griggio S.p.A.
c/o Atlantic Machinery Corporation
South End Plaza #36
New Milford, CT 06776
www.atlanticmach.com
(860) 354-7200
(860) 354-0315

Hendrick RWH Industries
32 Commercial Street
Salem, MA 01970
www.hendrickmfg.net
(978) 741-3600
(978) 744-0242

28.1.9

DUST COLLECTION MANUFACTURERS

Holz-Her
5120 Westinghouse Blvd.
Charlotte, NC 28273
www.holzher.com
(704) 587-3400
(704) 587-3419

Holzma: U.S., Inc.
P.O. Box 2756
1200 Tulip Drive
Gastonia, NC 28052
www.holzma.com
(704) 861-8239

Stiles Machinery Company
3965 44th Street S.E.
Grand Rapids, MI 49512
www.stilesmachinery.com
(616) 698-7500
(616) 698-9411

Air Control Technology
12530 Albion Vaughan Road
Bolton, Ontario, Canada L7E 1K7
www.pathcom.com
(905) 951-2233
(905) 951-0790

Coral, Torino, Italy
Atlantic Machinery Corporation
36 South End Plaza
New Milford, CT 06776
www.atlanticmach.com
(860) 354-7200
(860) 354-0315

Denray Machine
10775 LC 1140
Mt. Vernon, MO 65712
www.denray.com
(800) 766-8263
(417) 466-2394

Dixie Air Systems
1330 Knecht Avenue
Baltimore, MD 21229
www.washhalum.com/dixie
(410) 242-1001
(410) 247-4890

Donaldson Torit Products
P.O. Box 1299
Minneapolis, MN 55440
www.donaldson.com
(952) 877-3131
(952) 877-3155

Donaldson Torit Products
P.O. Box 1299
Minneapolis, MN 55440
www.donaldson.com
(952) 877-3131
(952) 877-3155

Kraemer Tool & Mfg. Co., Ltd.
75 Devon Road
Brampton, Ontario, Canada L6T 5A4
www.kraemertool.com
(800) 443-6446
(888) 565-9999

Murphy-Rodgers, Inc.
2301 Belgrave Avenue
Huntington Park, CA 90255
www.murphy-rodgers.com
(323) 587-4118
(323) 583-9540

Nordfab Systems, Inc.
102 Transit Avenue
P.O. Box 429
Thomasville, NC 27360
www.nordfab.com
(800) 532-0830
(336) 889-7873

Pneumafil Corporation
P.O. Box 16348
Charlotte, NC 28297-8804
www.pneumafil.com
(704) 998-2600
(704) 998-2601

Rees-Memphis, Inc.
2426 Channel Avenue
Memphis, TN 38113
www.reesmemphis.com
(800) 467-1830
(201) 774-5000

Rudolf Bass, Inc.
45 Halladay Street
Jersey City, NJ 07304
www.rudolfbass.com
(800) 526-3003
(201) 433-6853

28.1.10 ABRASIVES

3M Microfinishing Systems
3MCenter Bldg. 251-2E-04
St. Paul, MN 55144
www.3m.com/finishingsystems
(651) 737-1783
(651) 737-0399

Hermes Abrasives
524 Viking Drive
Virginia Beach, VA 23450
www.hermesabrasives.com
(800) 464-8314
(800) 243-7637

Klingspor
2555 Tate Blvd. SE
Hickory, NC 28603
www.klingspor.com
(800) 645-5555
(800) 524-6758

Micro-Surfacss Finishing, Inc.
P.O. Box 70
Wilton, IA 52778
www.micro-surface.com
(800) 225-3006
(563) 732-3390

Mirka Abrasives, Inc.
7950 Bavaria Road
Twinsburg, OH 44087
www.mirka-usa.com
(800) 843-3904
(800) 626-6970

Norton Co.
Worcester, MA
www.nortonabrasives.com
(508) 795-5000
(508) 795-2599

PARTIAL SUPPLIER LIST

Sia Abrasives, Inc., USA
1327-J Wood Branch Drive
Charlotte, NC 28273
(704) 587-7355
(704) 587-7350

Sungold Abrasives USA, Inc.
4 Harbor Park Drive
Port Washington, NY 11050
www.sungoldabrasives.com
(516) 484-5145
(516) 484-5108

VSM Abrasives Corp.
1012 E. Wabash Street
O'Fallon, MO 63366
www.vsmabrasives.com
(800) 737-0176
(636) 272-7434

Würth Group of North America
93 Grant Street
Ramsey, NJ 07446
www.wurth.com
(201) 818-8877
(336) 818-7835

28.1.12 ACCESSORIES

Adjustable Clamp Co.
417 North Ashland Avenue
Chicago, IL 60622
www.adjustableclamp.com
(312) 666-0640
(312) 666-2723

Align Rite Tool Co.
1942 E. 17th Street
Tucson, AZ 85719
www.alignritetool.com
(888) 624-1942
(520) 624-6737

Bessy Clamps
James Morton, Inc.
American Clamping Corp.
50 Franklin Street
Batavia, NY 14021
www.americanclamping.com
(716) 344-1160
(716) 344-0025

Dani Clamps.
1531 W. Hamlin Road
Rochester Hills, MI 48309
www.daniclamp.com
(243) 852-9548
(243) 299-9548

REPAIR ACCESSORIES

Andreas Custom Designs
80 Black Meadow Drive
Chester, NY 10918
(800) 935-5406
(845) 692-2354

SINK SUPPORT BRACKETS

Vance Industries Inc.
250 Wille Road
Des Plaines, IL 60018
www.vanceind.com
(847) 375-8900
(847) 375-6818

Precision Works
Huntington Beach, CA 92647
www.sinksetter.com
(714) 847-3396

DUST CONTROL

Zipwall®
37 Broadway - #2
Arlington, MA 02474
www.zipwall.com
(800) 718-2255
(781) 648-8808